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Evaluation of the Migratory Birds Program

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The evaluation was conducted in accordance with the 2016 Treasury Board (TB) Policy on Results. It was identified in the 2014 Departmental Risk-Based Audit and Evaluation Plan.

This report was approved by the Deputy Heads of Environment and Climate Change Canada on March 27, 2018. It is available on the Environment and Climate Change Canada website in both official languages.

This evaluation report was prepared by the Evaluation Division of the Audit and Evaluation Branch.

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List of acronyms and abbreviations

Acronym or abbreviation	Full name
AEB	Audit and Evaluation Branch
AMR	Avian Monitoring Review
BCR	Bird Conservation Region
BSC	Bird Studies Canada
CAFF	Conservation of Arctic Flora and Fauna
CCRM	Canadian Council of Resource Ministers
CEAA	Canadian Environmental Assessment Agency
CESD	Commissioner of the Environment and Sustainable Development
CWDC	Canadian Wildlife Directors Committee
CWS	Canadian Wildlife Service
DG	Director General
DUC	Ducks Unlimited Canada
ECCC	Environment and Climate Change Canada
EMC	Executive Management Council
ENGO	Environmental non-government organization
ESB	Environmental Stewardship Branch
FTE	Full-time equivalents
G&C	Grants and Contributions
INAC	Indigenous and Northern Affairs Canada
MBP	Migratory Birds Program
MBC	Migratory Birds Convention

Acronym or abbreviation	Full name
MBCA	Migratory Birds Convention Act, 1994
MBS	Migratory Bird Sanctuaries
NABCI	North American Bird Conservation Initiative
NAWMP	North American Waterfowl Management Plan
NAWCC	North American Wetlands Conservation Council
NTS	National Tracking System
NWA	National Wildlife Areas
OGD	Other government departments
PAA	Program Alignment Architecture
PCMD	Population Conservation and Management Directorate
PMF	Performance Management Framework
RMAF	Results-based Management and Accountability Framework
RBAF	Risk-based Audit Framework
SARA	Species at Risk Act
STB	Science and Technology Branch
U.S.	United States
USFWS	United States Fish and Wildlife Service
WLSD	Wildlife and Landscape Science Directorate
WMCC	Wildlife Ministers Council of Canada
WPSD	Wildlife Program Support Directorate

Executive summary

The Audit and Evaluation Branch of Environment and Climate Change Canada (ECCC) conducted an evaluation of the Migratory Birds Program (MBP) in 2016 to 2017 and 2017 to 2018, covering activities from fiscal year 2011 to 2012 to fiscal year 2016 to 2017.

The MBP includes a range of activities that contribute to migratory bird protection and conservation. It is responsible for implementing the Migratory Birds Convention signed with the United States in 1916, via the Migratory Birds Convention Act, 1994 (MBCA). Key program activities include:

- Monitoring the status of birds
- Expanding the base of scientific research and knowledge
- Protecting populations, individual birds, eggs, nests and habitats through conservation actions, stewardship and policy development
- Enforcing the MBCA and its regulations
- Providing advice and permits to support the effective management of migratory birds

The MBP is delivered by ECCC's Canadian Wildlife Service (CWS), with support from the department's Science and Technology Branch (STB) and Enforcement Branch and in partnership with other governments and non-governmental organizations. In 2016 to 2017, expenditures for the program totalled approximately $29 million.

The MBP has close links with several other ECCC programs, including the Habitat Conservation Partnerships Program, the Species at Risk Program, the Protected Areas Program and the Wildlife Compliance Promotion and Enforcement Program. Linkages with these other programs are not a specific focus of this evaluation.

Conclusions

Relevance

The MBP responds to the continued need to address the increasing threats posed to migratory bird populations, research and monitor populations and trends, and engage in international collaboration on migratory bird issues to conserve and protect migratory birds. The MBP is aligned with government priorities and is consistent with the role of the federal government in preserving and enhancing the natural environment, including flora and fauna like migratory birds. The MBP supports the federal government's obligations under the Convention for the Protection of Migratory Birds in Canada and the United States and the Migratory Birds Convention Act, 1994, as well as other key federal legislation related to the environment, wildlife and wildlife areas, species at risk, enforcement and environmental assessment.

Performance – expected results

The evaluation assessed the MBP's performance against expected results related to the following themes:

- Knowledge and data about migratory birds
- Protecting birds and their habitats
- Hunting and human interaction with migratory birds
- Awareness and value of migratory birds to Canadians
- Maintaining migratory bird populations at population goals

Knowledge and data about migratory birds

As a main area of focus for the MBP, extensive information and data are generated through monitoring and research, although significant gaps on status and trends still exist, mainly for non-waterfowl species. The program has developed some information products, such as 25 Bird Conservation Regions strategies, to provide decision-making tools for regional stakeholders and contributes data and expertise to some large-scale studies and external initiatives. However, there has been minimal promotion or uptake of some of the available information. In addition, inefficient data management and dissemination practices inhibit the flow of information to the stakeholders who need it to take action.

The MBP's monitoring activities are considered to be of high quality by partners. However, due to the sheer number of bird species to monitor over a large area, ongoing knowledge gaps hinder the establishment of accurate population goals and the ability to measure progress in this area.

Protecting birds and their habitat

The MBP conducts work to identify and reduce the various threats to migratory birds. This includes reducing the risk of habitat loss and toxic substances, among other important threats. Protecting important bird habitat is an essential element of migratory bird conservation. However, much habitat protection work does not fall under federal jurisdiction and requires the implementation of effective partnerships, particularly in the case of international issues. Habitat conservation conducted through the North American Waterfowl Management Program has yielded positive conservation outcomes for waterfowl. More work is required to address the causes of habitat loss for other bird species.

Over the evaluation period, the evaluation team observed an increase in support for and consideration of migratory bird issues from certain large industrial sectors, particularly related to the issue of incidental take, although the need for continued work in this area remains. More effort is also needed to address other threats to migratory birds, such as threats from development projects, toxic substances and threats in other countries. Areas for improvement include the need for increased engagement with municipalities and international jurisdictions.

Hunting and human interaction with migratory birds

Hunting regulations have been effective for keeping harvests of migratory birds at sustainable levels. The effectiveness of hunting regulations can be attributed to the strong focus on monitoring harvested species, which is essential to informing biennial updates to the regulations.

Steps are being taken to address the issue of bird populations that cause damage or danger. Despite certain challenges, the MBP has made progress in this area, particularly at airports and in the case of human-related conflict. Tools were developed to manage threats and conflict. These include a handbook to identify mitigation approaches for interactions with Canada and cackling geese, a permitting scheme that allows the public to manage or remove nuisance birds if mitigation measures are insufficient, and a financial assistance program for crop damage in the Prairies. Challenges are ongoing with the management of certain overabundant populations, such as the Central and Western Arctic populations of snow geese.

Awareness and value of migratory birds to Canadians

Positive conservation outcomes inherently rely on changes in public and stakeholder behaviours. As such, the MBP conducts some stakeholder and public outreach through the development and promotion of online information; guidelines, including guidelines for best management practices; the promotion of key studies; and funding support to partners conducting these activities. However, this was identified as an area of weakness for the program, since there is no overarching stakeholder engagement plan and these activities are currently conducted on an ad hoc basis. Two particular areas of concern highlighted by interviewees were municipal and international engagement.

The evaluation found that Canadians generally value birds and the public is increasingly engaged in citizen science and volunteering. However, knowledge of specific conservation issues affecting migratory birds is seen to be quite low. The number of hunters has been declining over the last few decades. There is also some evidence that the public base of support for the MBP is aging. Opportunities exist to leverage increasing interest in citizen science and volunteering in the short term. In the long term, there may be a need to develop engagement strategies for other segments of the population, such as younger generations and newcomers to Canada.

Maintaining migratory bird populations at population goals

Given the large number of bird species to monitor over a large area, there is insufficient data to estimate long-term trends for approximately 30% of all bird species in Canada. For those migratory species for which adequate monitoring data is available, 57% have population sizes within an acceptable range, and 43% do not. This varies significantly by bird group. Waterfowl and forest bird species are more likely to be within acceptable ranges, while grassland birds and aerial insectivores have much lower proportions of species within acceptable levels.

Performance – program efficiency

The MBP maintains and leverages long-standing, effective relationships with major environmental non-governmental organizations to carry out conservation actions, data collection, research, data

dissemination and public outreach. Collaboration at the municipal and international levels remains an important area for improvement, since partnerships with other nations and collaboration with municipalities can significantly impact population outcomes for migratory birds.

The MBP researches and makes use of new technologies, such as remote sensing technology, automatic recording units and tracking devices. These technologies enable the collection of monitoring data that would previously have been cost prohibitive. The MBP also supports and draws on citizen science to enhance the efficiency of the program.

The MBP has a governance structure in place that consists of several cross-cutting technical committees that provide input to higher level committees. This structure is clearly defined and viewed as an appropriate model for the program. Following a reorganization in April 2016, some issues related to prioritization and communication were identified. Given that the organization had not yet had time to settle into the new structure when these issues were identified by the evaluation, no recommendation is being made at this time related to governance. It is suggested, however, that these issues be closely monitored.

The MBP does not formally collect or systematically compile operational and performance data on most of its activities and progress on expected results. However, it collects data in a few key areas, including its monitoring activities, enforcement statistics and service standards for permitting. A review of the program's performance measurement processes is ongoing as part of the implementation of the Treasury Board Policy on Results.

Recommendations

Four recommendations are addressed to the Assistant Deputy Minister (ADM) CWS, working in collaboration with the ADM, STB, as appropriate:

1. Take steps to address current gaps in migratory birds monitoring data.
2. Develop and implement improved internal data management systems for the scientific data generated by the Migratory Birds Program.
3. Improve the dissemination of program knowledge and data to stakeholders and partners, to allow them to make greater use of available knowledge when planning and undertaking conservation actions.
4. Review current stakeholder engagement and outreach processes, and develop a strategy to enhance awareness and educate the different stakeholder groups on issues affecting migratory birds.

The ADM of CWS agrees with the recommendations and has developed a management action plan that appropriately addresses each recommendation.

1. Context

Approximately 451 species of birds regularly occur in Canada. The majority of these bird species travel across international borders throughout their lifecycles. Under the Migratory Birds Convention Act, 1994 (MBCA), Environment and Climate Change Canada (ECCC) is responsible for 368 species that are collectively referred to as "migratory birds".

Migratory birds are enjoyed by Canadians in a number of ways, including bird-watching and hunting, and the activities around them make a significant contribution to the Canadian economy. For example, in 2012, Canadians spent $1.8 billion on non-commercial hunting and trapping and $537 million on birding. They play important ecological roles in the environment by, for example, eating insects, dispersing seeds and pollinating plants. In addition, the health of bird populations serves as an important indicator of the overall health of the environment. As migratory species, they depend on habitat in multiple locations in different countries and at different stages in their lifecycle. As such, they are a powerful example of the interconnectedness of environmental issues and the need for joint action by multiple governments to ensure species health.

Today, many species of migratory birds are experiencing population declines of a magnitude and duration that may result in the species becoming endangered. In Canada, more than 40 birds protected by the MBCA are also listed as endangered, threatened or extirpated in Schedule 1 of the Species at Risk Act (SARA). As well, several groups of birds are showing serious, long-term population declines. A key cause of population declines is habitat loss and fragmentation caused by human activity. This can affect the quantity and quality of habitat needed to maintain sustainable populations of migratory birds. However, not all bird species are declining. In some cases, an overabundance of a species has led to human-wildlife conflicts such as agricultural crop damage.

1.1 The Migratory Birds Program

The goal of the Migratory Birds Program (MBP) is to ensure that migratory bird populations are maintained at healthy levels. It is responsible for implementing the Migratory Birds Convention (MBC) signed in 1916, via the MBCA. The MBP includes a range of activities that contribute to migratory bird protection and conservation. Key program activities include:

- Monitoring the status of birds
- Expanding the base of scientific research and knowledge
- Protecting populations, individual birds, eggs, nests and habitats through conservation actions, stewardship and policy development
- Enforcing the MBCA and its regulations
- Providing advice and permits to support the effective management of migratory birds[1]

[1] Where appropriate, permits can be issued under the Migratory Birds Regulations; in some cases and under specific conditions, permits can be issued to enable the management of human-wildlife conflicts.

The MBP is delivered by the Canadian Wildlife Service (CWS)[2], with support from the Wildlife and Landscape Science Directorate (WLSD) in the Science and Technology Branch (STB), the Wildlife Enforcement Directorate in the Enforcement Branch and in partnership with other governments and non-governmental organizations. In fiscal year 2016 to 2017, program expenditures totalled $28,973,318.

The MBP has close links with several other ECCC programs, including the Habitat Conservation Partnerships Program, the Species at Risk Program, the Protected Areas Program, and the Wildlife Compliance Promotion and Enforcement Program. Linkage with these other programs is not a particular focus of this evaluation.

Details about the MBP's legislative context, activities, governance and management, resource allocation and expected results can be found in Appendix A.

1.2 About the evaluation

The evaluation covered the five-year period from 2011–12 to 2016–17. The evaluation focused on key program activities aimed at ensuring that bird populations are maintained at healthy levels. It examined the MBP's science component and its linkages with various domestic and international partners.

The findings and conclusions presented in this document were based on five data collection methodologies: document reviews, interviews with internal and external stakeholders, file reviews, case studies and a focus group on the role of partnerships. Details about these methodologies and the scope of the evaluation can be found in Appendix D.

Limitations were encountered while conducting the evaluation and strategies were put in place to mitigate their impact, as follows:

Limitations	Mitigation strategies
The MBP includes many activities and components, many partnerships in Canada and internationally and close linkages with other ECCC programs. A key challenge was to clarify the role of each of these various components in contributing to the program's expected results.	An evaluation steering committee composed of key program representatives supported the evaluation team, sharing their in-depth knowledge of the MBP, providing clarifications and reviewing data collection tools and key findings, to ensure that the appropriate program context was considered.
Due to the range of external stakeholders consulted in this evaluation, not all stakeholders were familiar with all program components. As such, they could only provide limited insights regarding the overall program.	In interviews, the interviewer clearly communicated the context and scope of the evaluation. The analysis of responses considered the subject area expertise of the respondent.

[2] The Canadian Wildlife Service was previously a directorate within the Environmental Stewardship Branch. As of April 2016, the CWS is a branch in its own right, with an assistant deputy minister and three directors general.

Key findings are presented in the next three sections. A rating is provided for each core issue assessed, based on a judgment of the evaluation findings. A summary of ratings for the evaluation questions is provided in Appendix C.

Statement	Definition
Expectations met	The intended outcomes or goals have been achieved.
Further work required	Considerable progress has been made to meet the intended outcomes or goals, but attention is still needed.
Priority attention required	Insufficient progress has been made to meet the intended outcomes or goals and attention is needed on a priority basis.
Unable to assess	Insufficient evidence is available to support a rating.

2. Findings: relevance

This section summarizes the evaluation findings related to the relevance of ECCC's involvement in the Migratory Birds Program (MBP). It does this by exploring the demonstrable need for the program, its alignment with government priorities and its consistency with the roles and responsibilities of the federal government.

Relevance criteria	Expectations met	Further work required	Priority attention required	Unable to assess
2.1 Continued need for the MBP	•			
2.2 Alignment with federal government priorities	•			
2.3 Consistency with federal roles and responsibilities	•			

Findings: Due to the ecosystem services that birds provide and observed declines in some populations, the MBP responds to a continued need to address the increasing threats posed to migratory bird populations; to research and monitor populations and trends; and to engage in international collaboration on migratory bird issues to conserve and protect migratory birds.

The MBP is aligned with government priorities related to the protection of the environment and ecosystems, the management and enhancement of protected areas, including migratory bird sanctuaries, and meeting population goals for species at risk, including migratory birds.

The MBP is consistent with the role of the federal government in preserving and enhancing the natural environment, including flora and fauna like migratory birds. The program is also consistent with ECCC's mandate legislated by the Migratory Bird Convention Act, 1994 and other legislation related to wildlife and wildlife areas, species at risk, enforcement and environmental assessment, and fulfills obligations under the Migratory Birds Convention.

2.1 Continued need for the MBP

There is a continued need to conserve and protect migratory bird populations and their habitat through international co-operation, given the increasing threats posed by the destruction of habitats, pollution, invasive non-native species and climate change. Since 1970, there has been an overall decline of 12% for migratory birds found in Canada, with some species now of conservation concern.

Healthy bird populations provide multiple benefits to humans and the natural environment and are an important element in a healthy ecosystem.[3] Several major groups of migratory birds such as aerial insectivores and shorebird species are in decline. Concerted international action has led to

[3] Whelan, Christopher J. et al. 2015. "Why Birds Matter: From Economic Ornithology to Ecosystem Services." Journal of Ornithology, vol. 156, p. 228.

more sustainable waterfowl hunting and increased protection and restoration of wetland habitats. There is a need, however, for continued action to maintain the conservation gains for these species and enhance conservation actions for other migratory bird species.

Bird watching is one of the most popular outdoor recreational activities in Canada. Millions of Canadians feed birds in their backyards. Waterfowl hunting provides food and supports local economies. Collectively, these activities contribute billions of dollars to the Canadian economy. Birds also provide immeasurable economic and ecological benefits by controlling insect and rodent populations, dispersing seeds and pollinating plants.[4]

Work related to migratory birds is conducted in the context of other federal programs such as the Species at Risk Program or by other levels of government. The MBP was designed to achieve its objectives through establishment and support of partnerships, fostering coordination and complementarity of actions among stakeholders. A high level of integration exists among the mandates of large environmental non-governmental organizations (ENGO), the provincial and territorial governments and ECCC, to deliver complementary programs and ensure the amount of duplicative work is low. There would be significant gaps in addressing migratory bird issues in the absence of ECCC's participation, particularly with respect to monitoring.

2.2 Alignment with federal priorities

The protection and conservation of migratory birds are a federal priority. These priorities and commitments are outlined in the following documents:

- Ministerial Mandate Letter
- Budget 2016 commitments
- Federal Sustainable Development Strategy 2013-16, 2016-19
- 2014 National Conservation Plan
- ECCC's Science Strategy 2014-2019

2.3 Consistency with federal roles and responsibilities

All provinces and territories have enacted additional legislation to protect migratory birds.[5] However, only the federal government, and specifically ECCC, has a legal responsibility to develop and implement policies and regulations to ensure the protection and conservation of the migratory birds listed in the MBCA. The MBP also supports the government in addressing international commitments including agreements such as the Migratory Birds Convention.

The program is consistent with and supports the following federal legislation:

[4] North American Bird Conservation Initiative Canada. The State of Canada's Birds. 2012.
[5] ECCC. 2017. Birds protected in Canada under the Migratory Birds Convention Act, 1994.

- Migratory Bird Convention Act, 1994
- Species at Risk Act, 2002
- Canada Wildlife Act, 1985
- Canadian Environmental Assessment Act, 2012, and additional federal legislation addressing environmental assessment in the north[6]

[6] Includes the Mackenzie Valley Resource Management Act, 2016; the Yukon Environmental and Socio-economic Assessment Act; the Nunavut Planning and Project Assessment Act; and the Environmental Enforcement Act, 2009.

3. Findings: expected results

This section summarizes the evaluation findings pertaining to the achievement of the Migratory Birds Program's (MBP) expected results. It looks at expected results related to:

- knowledge and data about migratory birds
- protecting birds and their habitats
- hunting and human interaction with migratory birds
- awareness and value of migratory birds to Canadians and the program's long-term outcome that migratory birds are maintained at population goals

3.1 Knowledge and data about migratory birds

Expected results	Expectations met	Further work required	Priority attention required	Unable to assess
3.1.1 Knowledge and data are available to manage and assess bird populations		•		

Findings: As a main area of focus for the MBP, extensive information and data are generated through monitoring and research. However, significant gaps exist related to status and trends, mainly for non-waterfowl species. The program has developed some information products, such as 25 Bird Conservation Regions (BCR) strategies, to provide decision-making tools for regional stakeholders. It also contributes data and expertise to large-scale studies and external initiatives. Uptake of available information has been limited because of minimal promotion and inefficient data management and dissemination practices that inhibit the flow of information to stakeholders who need it to take action.

Availability of knowledge and data to manage and assess bird populations

The ability to assess the status and set population goals relies on high quality and accurate monitoring data. The MBP currently conducts monitoring of migratory birds using monitoring stations and surveys operated in collaboration with external agencies, other levels of government, non-governmental organizations and university researchers. Over time, knowledge of migratory birds has increased as new monitoring programs are developed and existing programs are able to increase their geographic coverage, mostly because of increased volunteer participation. Some of the major migratory bird monitoring initiatives that ECCC supports include the Waterfowl Breeding and Habitat Survey as well as volunteer-based surveys like the Christmas Bird Count and the Canadian Migration Monitoring Network. Some monitoring surveys share their data online in a centralized database, such as the Atlantic Canada Shorebird Survey and the Ontario Shorebird Survey.

Of the 99 projects funded by the MBP through grants and contributions between fiscal year 2011 to 2012 and fiscal year 2015 to 2016, 83 (83.8%) contributed to the goal of gathering knowledge and data in order to manage and assess bird populations. This includes both data collection, such as monitoring through surveys and monitoring stations and management actions such as creating guidelines for population management.

The knowledge and data generated by the MBP is used in the following ways:

- to inform regulatory development (after analysis) and to set harvest levels
- by environmental groups, to carry out conservation actions
- to inform other aspects of ecosystem research, since birds are considered to be bio-indicators
- by environmental assessment proponents
- by and for birdwatching tourists
- by land owners and managers, including industry

Additionally, population trends are used to assess the risk of extinction and to determine which species should be listed under Schedule 1 of SARA. Once a species is listed under the Schedule 1 of SARA, legally mandated recovery actions are set in motion through ECCC. Adequate monitoring data is crucial for appropriate resource allocation.

Despite the new and expanding understanding of migratory bird population status and their trends, there are major gaps in the knowledge available to ECCC and others to assess and manage bird populations.

- The Avian Monitoring Review (AMR) assessed gaps in current ECCC monitoring programs for each of the five major bird species groups, namely land birds, sea birds, shorebirds water birds (inland marsh birds) and waterfowl. The review found that there is insufficient monitoring data to adequately determine population trends over time for 30% of all bird species that regularly occur in Canada. Gaps in monitoring coverage include the boreal forest, marine waters and the Arctic region.
- All internal interviewees and the majority of external interviewees held the view that there are major gaps in knowledge. Interviewees were of the opinion that, except for the population goals for waterfowl, monitoring data is often insufficient to even determine the current population status, let alone set population goals. A majority of program managers held the view that more work needs to be done to address possible declines of shorebirds, grassland birds, water birds and aerial insectivores.
- Because waterfowl are hunted, a greater investment is made in robust monitoring data, in part because of collaboration with and support from the United States.
- Other data and information gaps identified by internal and external interviewees included:

- the impacts of threats such as climate change and threats to wintering habitats in regions like South America
- baseline data to ensure that migratory birds are being adequately considered in environmental assessments
- greater regional and local-level data to inform specific regional conservation actions
- bird habitat use and availability, particularly in northern and remote areas

Data management and dissemination

Gaps in knowledge and data are exacerbated by inefficient data management and dissemination. Data management by the MBP is the most frequently cited area of inefficiency. Program managers indicated that the MBP has no data management business line, meaning that interested parties both inside and outside of government do not know the extent of the information that could be available. This hinders the sharing of information between program elements and external stakeholders and the ability of external organizations to leverage the work of the program. In addition, interviewees indicated that implementing new or improved web-based tools are limited by capacity challenges within the Corporate Services and Finance Branch, which is responsible for departmental web content.

- Case study evidence indicates that tracking actions taken by all partners, integrating information management systems and developing a collaborative work space would be of great value for population management. The case study on the Canada Warbler noted these services are often not well resourced and federal data management systems often pose limitations to timely communication and collaboration.
- In its review of monitoring programs, the AMR found only 40% of surveys are managed through a database or system that is accessible to multiple users. The report recommends that monitoring data be integrated into a secure and accessible national database and managed according to modern standards.

The MBP publishes a significant number of peer-reviewed, scientific studies, such as a recent study on the sources of human-related bird mortality, and some efforts have been focused on summarizing data such as presenting migratory bird population trends. However, knowledge dissemination could also be improved. According to internal interviewees, the dissemination of data and research results is essential to the success of the MBP, since its mandate is to provide others with the information and tools to carry out conservation and stewardship actions. The evaluation found the following.

- The need for a modernized, interactive website was raised, as well as linking migratory bird data to other dissemination initiatives like the Federal Geospatial Platform. Focus group participants also noted that there is a need for ECCC to enhance data management and to develop better tools to communicate information.
- The MBP has developed 25 Bird Conservation Region (BCR) strategies that cover issues and priorities for each of the 25 bird-specific conservation regions in Canada. Most internal interviewees agree that the BCR strategies are well developed and contain a wealth of

useful information on regional populations, threats and trends. However, the strategies have not been promoted or communicated to relevant stakeholders to encourage their implementation. External stakeholders were of the opinion that the BCR strategies were a promising initiative that has not yet realized its full potential. They unanimously agree that the BCR strategies need to contain more concrete suggested actions or tools for them to be properly implemented in the regions.

- External stakeholders also noted that the MBP would be more efficient if ECCC better communicated its research priorities to academic and research institutions and consulted with them during development of the BCR strategies. This would allow these institutions to engage more effectively in research projects that are aligned with ECCC priorities and increase the likelihood of these stakeholder groups making use of them.

3.2 Protecting birds and their habitats

Expected results	Expectations met	Further work required	Priority attention required	Unable to assess
3.2.1 Priority habitats for migratory birds are conserved and improved		•		
3.2.2 Threats to migratory birds are reduced		•		

Findings: The MBP conducts work to identify and reduce the various threats to migratory birds. This includes reducing the risk of habitat loss and toxic substances, among other important threats.

Protecting important bird habitat is an essential element to migratory bird conservation. However, much habitat protection work is outside of federal jurisdiction and requires the implementation of effective partnerships, particularly in the case of international issues. Habitat conservation conducted through the North American Waterfowl Management Plan (NAWMP) has yielded positive conservation outcomes for waterfowl. More work is required, however, to address the causes of habitat loss for other bird species.

Over the evaluation period, increased support for and consideration of migratory bird issues from certain large industrial sectors, particularly related to the issue of incidental take were observed, although the need for continued work in this area remains. More effort is also needed to address other threats to migratory birds, including threats from development projects, toxic substances and threats in other countries. Areas for improvement include the need for increased engagement with municipalities and international jurisdictions.

Conserving and improving priority habitats for migratory birds

Habitat loss and degradation are among the biggest threats to migratory birds. They are linked to population declines of many migratory bird species. Canada's lands are managed by various jurisdictions. As such, work to protect bird habitats on a national or international scale requires the development of extensive collaborative networks with multiple levels of government.

Responsibility for the management of habitats and landscapes falls largely within the jurisdiction of the provinces and territories. However, the federal government is responsible for habitats on federal lands and federally protected areas like national parks, wildlife areas and bird sanctuaries.

To address priority habitats for migratory birds, the MBP has strong linkages to other ECCC programs that focus on habitat conservation and management, including the following programs.

- The Protected Areas Program manages 92 migratory bird sanctuaries on federal, provincial and private lands that protect birds and their nests from harm and disturbance on nearly 11.5 million hectares of migratory bird habitat. National Wildlife Areas managed by the 54 Protected Areas Program also protect roughly 1 million hectares of habitat for species and ecosystems at risk.
- The Species at Risk Program may also take action to protect habitat of at-risk migratory birds based on their status. For example, four migratory birds are benefitting from grassland enhancement projects with agricultural landowners in Saskatchewan as part of the South of the Divide Action Plan.
- The Habitat Conservation Partnerships Program is focused on ensuring that wildlife habitat on private lands, provincial Crown lands, indigenous lands or in aquatic and marine areas across Canada are secured and managed in ways that are compatible with habitat conservation.

During the evaluation period, the MBP funded projects that focus on habitat conservation, including university research using innovative technologies and habitat status monitoring across the country.

As well, an important partnership for the MBP and habitat and migratory bird conservation has been the department's participation in NAWMP. This Canada-United States-Mexico partnership of federal, provincial and state governments and non-governmental organizations provides funding for projects to conserve waterfowl populations and their habitat in North America. ECCC participates in four Habitat Joint Ventures and three internationally linked Species Joint Ventures that aim to address local, regional and continental goals. The Habitat Joint Ventures fall under ECCC's Habitat Conservation Partnerships Program. The MBP supports the three Species Joint Ventures (Black Duck, Sea Duck and Arctic Goose).

- NAWMP has been effective in addressing waterfowl conservation and has led to more sustainable management of waterfowl hunting and protection or restoration of many wetlands. From 1985 to 2015, approximately 80,700 square kilometres of waterfowl habitat has been secured by NAWMP in Canada.[7]
- Focus group participants attribute NAWMP's success to the high level of U.S. funding for conservation in Canada, its clear objectives and priorities, a specified timeline and plan for assessing its achievements and recognition of the need to demonstrate progress through action on the ground.

[7] ECCC. 2016. Habitat secured for waterfowl.

Threats to migratory birds are reduced

Incidental take: Incidental take refers to the inadvertent harm, killing or destruction of birds, their nests and eggs. An important scientific study produced and published by the MBP in 2013 that synthesized the major sources of human-related bird mortality. It concluded that bird mortality from human-related activities continues to pose a significant conservation challenge. An estimated 269 million birds and 2 million nests are destroyed annually in Canada from human-related sources.[8] The major causes of bird mortality, namely domestic and feral cats and collisions with power lines and buildings, stem from activities that fall under local or municipal jurisdiction. The Fall 2013 report by the Commissioner of the Environment and Sustainable Development (CESD) recommended that the MBP develop best practice guidelines beneficial to birds and promote these guidelines among the appropriate stakeholders, to reduce the threat from incidental take. Views on the extent to which threats from incidental take have been reduced were mixed; however, most agreed that there is much work to be done on reducing or managing this threat. According to interviewees, there has been increased participation and collaboration from large industries on this issue. Some progress related to incidental take was noted over the evaluation timeframe.

- The MBP is currently attempting to provide tools to industry and other stakeholders to reduce incidental take, such as nesting calendars, guidance for developing best management practices and guidelines for avoidance.
- In 2015, a compliance promotion plan and guidance document for internal staff were developed to share ECCC's approach to incidental take. The plan identifies key approaches for engaging stakeholders, such as industry, municipalities and internal employees, and communications products.
- The Canadian Wildlife Service (CWS) also collaborated with the Enforcement Branch to develop protocols on incidental take, and implemented training for enforcement officers, to address this issue on the ground.
- ECCC and Fisheries and Oceans Canada collaborated to reduce the number of bird deaths from longline fisheries. A 2012 progress report highlights mitigation measures that were implemented to reduce the risk of bird deaths at sea, such as improving the At-sea Observer Program and fisheries closures. Monitoring initiated through this action plan found that incidental take associated with longline fisheries is low; however, monitoring also identified new areas of risk in gill net fisheries.
- Outreach work was done in partnership with non-governmental organizations (NGO) to reduce incidental take caused by house cats and collisions with buildings. Additionally, work to reduce incidental take from wind farm development was conducted in collaboration with the Saskatchewan government and other provinces.

Managing threats to migratory birds in environmental assessments: In most cases, there is not enough baseline data to ensure that migratory birds are being adequately considered in

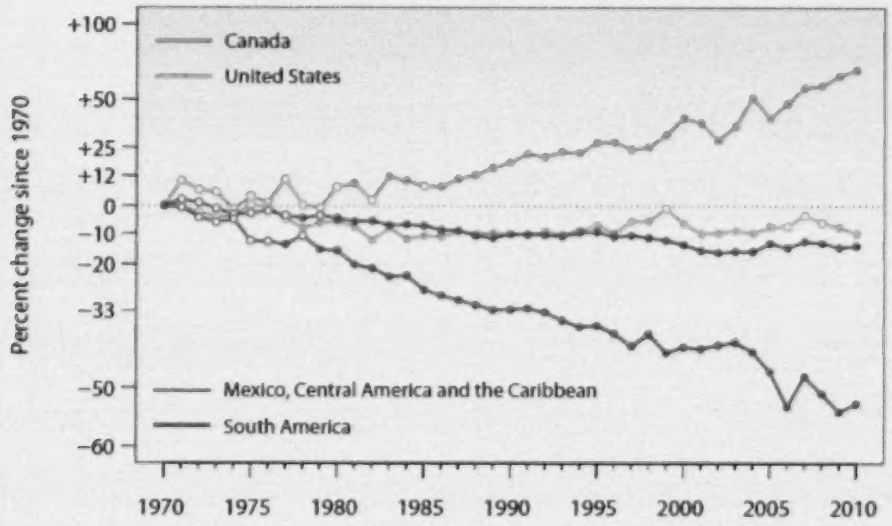
[8] Calvert, A. M., C. A. Bishop, R. D. Elliot, E. A. Krebs, T. M. Kydd, C. S. Machtans, and G. J. Robertson. 2013. A synthesis of human-related avian mortality in Canada. Avian Conservation and Ecology 8(2): 11.

environmental assessments. Gaps in data make it difficult to discern the impact that a project could have on bird populations. Projects are often looked at in isolation, without an adequate assessment of the cumulative effects on bird populations in particular and ecosystems more generally. Additionally, challenges associated with the magnitude of the review workload for environmental assessments were raised.

Toxic substances: Senior management highlighted past successes in the area of toxic substance reduction, such as elimination of lead ammunition and pesticides like DDT. The MBP is working to reduce threats from toxic substances through research supporting the development of regulations for lead fishing gear, initiatives to reduce exposure to birds at sea from oil-based toxins and the research to support convictions in legal cases. A newer threat, which must be addressed, is the role of neonicotinoids[9] on the observed declines in some bird groups such as aerial insectivores.

Threats in other countries: Successful conservation of migratory birds requires international action, since birds face threats in the countries where they overwinter. The population levels of birds that overwinter in the United States, Mexico, Central America, the Caribbean and South America have declined since 1970, as shown in Figure 1. Species that migrate to South America are declining the most. Threats exist on wintering grounds from agriculture, urbanization, harvest, deforestation and pesticides. ECCC may lack sufficient data to persuade international partners in areas such as Latin America and the Caribbean to take appropriate action.

Figure 1: bird species population trends by region in which species overwinters



Source: NABCI Canada. The State of Canada's Birds. 2012.

[9] Neonicotinoids are a group of pesticides used to protect crops against insects in agriculture and for other uses such as controlling fleas on pets.

Climate Change: All program managers interviewed were of the view that ECCC does not have adequate knowledge and data on the effects of climate change on migratory bird populations and their habitats. Although the MBP has some knowledge, gaps in monitoring and a low research capacity in this area mean that there is not enough data to effectively address this issue.

Threats to species at risk: Under ECCC's Species at Risk Program, scientists work with provincial and territorial governments to prepare recovery strategies for bird species that are designated as extirpated[10], endangered, threatened or a special concern under SARA. Of the 47 migratory bird species that are designated in this manner, 39 (83%) have species-specific recovery plans. Additionally, 33 (70%) of the 47 species are addressed in at least one Multi-species Action Plan for a particular geographic region.[11] Also, as reported in ECCC's 2016-17 Departmental Results Report, the proportion of assessed migratory bird species with a 'secure' status increased from 77% in 2010 to 79% in 2015, marking some progress towards the 81% target.

3.3 Hunting and human interaction with migratory birds

Expected results	Expectations met	Further work required	Priority attention required	Unable to assess
3.3.1 Migratory bird harvests are maintained at sustainable levels	•			
3.3.2 Threats to public health and safety and economic loss due to migratory birds are reduced	•			

Findings: Hunting regulations have been effective for keeping the harvest of migratory birds at a sustainable level. The effectiveness of hunting regulations can be attributed to the strong focus on monitoring harvested species, which is used to inform the biennial updates to the regulations.

Steps are being taken to address the issue of bird populations that cause damage or danger. Despite certain challenges, the MBP has made progress in this area, particularly at airports and in the case of human-related conflict. Tools were developed to manage threats and conflict, such as a handbook to identify mitigation approaches for cackling and Canada geese, a permitting scheme that allows the public to manage or remove nuisance birds if mitigation measures are insufficient and a financial assistance program for crop damage. Challenges exist with the management of certain overabundant populations, such as the Central and Western Arctic populations of snow geese.

Maintaining migratory bird harvests at sustainable levels

Harvest management is a primary focus of the MBP and a central issue for collaboration with the United States (U.S.). According to interviewees, much of the success of this aspect of the program

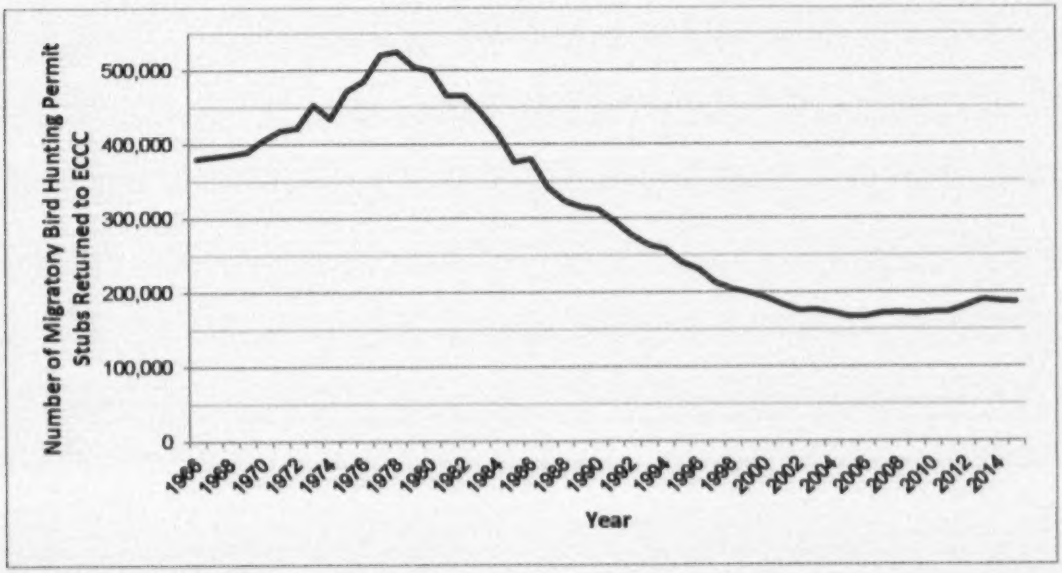
[10] Extirpated species means a wildlife species that no longer exists in the wild in Canada, but exists in the wild elsewhere in the world.
[11] ECCC. 2017. Birds Protected by the Migratory Birds Convention Act and Listed as Endangered, Threatened or Extirpated in SARA Schedule 1.

can be attributed to appropriate funding levels. Collaboration and financial support from the U.S. for monitoring, research and habitat securement of harvested species, particularly waterfowl, mainly through NAWMP and Flyway Councils, contributes to maintaining harvests at sustainable levels.

However, some specific inter-jurisdictional challenges were identified, such as the difficulty in harmonizing harvest rates or conservation legislation in different regions in both countries. Evaluation evidence also revealed that two areas of concern were overabundant species such as snow geese and the uncertainty around Sea Duck population levels.

The MBP evaluates the status of migratory game birds every year. It also publishes updated hunting regulations every two years, with amended bag limits every two years, to respond to changes in species population levels. Hunters are encouraged to provide information on their permit application, which helps inform the National Harvest Survey. They are also asked to assist with species monitoring by reporting bird bands that they encounter to the Canadian Bird Banding Office at CWS. Although the number of hunters has decreased in recent decades compared to its peak in 1978, the number of permits sold by ECCC has remained relatively steady since 2000 and even increased by about 20,000 between 2005 and 2015 (see Figure 2).

Figure 2: number of migratory game bird hunting permit stubs returned to ECCC (Canada)



Source: Canadian Wildlife Service. Permit Sales.

Case study interviewees agreed that the available data is important in setting harvest levels at appropriate thresholds, to allow for the management of both abundant and declining populations. However, harvesting statistics collected through hunter surveys do not differentiate among the different populations because they can be difficult to distinguish (for example, the Canada goose and the cackling goose). This can become an issue in the context of harvest monitoring. Furthermore, there is a lack of information regarding Indigenous harvest levels.

Beyond harvest management associated with hunting, program managers had mixed views on the contribution of compliance promotion related to the other activities covered by the Migratory Birds Regulations (for example, permitting for research, aviculture, damage and danger). Overall, a majority of program managers were of the opinion that, except for compliance promotion for the hunting regulations and some sector-specific communication regarding incidental take, the MBP does not engage in much compliance promotion.

From an enforcement perspective, capacity is limited, with activities being focused mainly on hunting regulations and complaints.

Reducing threats to public health, safety and economic losses due to migratory birds

The MBP monitors and provides some tools for stakeholders, to help manage populations of migratory birds that are causing damage and danger across the country. Some of the tools and information include actions that landowners can take to reduce damage, permitting schemes, egg destruction and relocation and management plans specifically for populations of geese. However, interviewees indicated that there could be additional tools developed for other nuisance species such as ring-billed gulls.

Activities and results of the MBP's activities for two of the major overpopulated species are described below.

- **Snow geese:** Measures undertaken by the MBP and its partners have seen varying levels of success in managing the overabundance of Snow geese in the Arctic. Increased bag limits and the opening of a spring hunting season had no effect on reducing the lesser snow goose population in the Prairies, because there are fewer hunters and migration patterns are changing. However, program stakeholders indicated that the population of greater snow geese in Eastern Canada has stabilized with increased harvest. For Western Arctic snow geese, it is still too early to tell if the spring harvest has had an impact in reducing population numbers. Still, snow geese continue to pose an ecological threat to Arctic habitat and ecosystems and displace other species.
- **Canada geese:** The Canada goose case study demonstrated that progress has been made towards maintaining Canada goose populations at population targets. Harvest regulation is the main tool used to manage Canada Goose population levels, since it can be tailored to reflect population issues in different regions. For example, in response to population growth, hunting geese that breed in temperate zones has been liberalized to help mitigate conflict with humans and crop damage. As a result, the number of geese harvested annually has also increased, from approximately 626,801 Canada and cackling geese in 2004 to 757,548 in 2014. While some populations are small, temperate nesting populations are growing rapidly, causing conflicts with people. For the most part, adequate data appears to be available to support management.

Waterfowl crop damage: The MBP supported programming in the Prairies region to help avoid damage to crops by waterfowl. Landowners can use preventative measures, including feeding stations and scare cannons, to discourage waterfowl from destroying crops. CWS pays for prevention programs through a federal-provincial cost-sharing agreement. As well, landowners

receive compensation from agricultural organizations for destroyed crops. Compensation costs have not declined over the past two decades, even with additional preventative measures. However, prevention is still more cost-effective than compensation. According to provincial reviews, it costs four times more to compensate a landowner for destroyed crops than it would to prevent the waterfowl from destroying the crops in the first place. Similar crop damage prevention programs were implemented in other parts of the country; however CWS ended its participation in these programs prior to the evaluation timeframe.

3.4 Awareness and value of migratory birds to Canadians

Expected results	Expectations met	Further work required	Priority attention required	Unable to assess
3.4.1 Increased awareness and support for migratory bird conservation		•		
3.4.2 Migratory birds are valued by Canadians	•			

Findings: Positive conservation outcomes inherently rely on changes in public and stakeholder behaviour. As such, the MBP conducts some stakeholder and public outreach through the development and promotion of online information, guidelines and key studies, as well as funding support to partners conducting these activities. However, there is no overarching stakeholder engagement plan and these activities are currently conducted on an ad hoc basis. The limited capacity and investment in municipal and international engagement were highlighted as two areas of particular concern.

The evaluation found that Canadians generally value birds and the public is increasingly engaged in citizen science and volunteering. Yet, knowledge of specific conservation issues affecting migratory birds is seen to be quite low. The number of hunters has been declining over the last few decades. As well, there is some evidence that the public base of support for the MBP is aging. Opportunities exist in the short term to leverage the increasing interest in citizen science and volunteering. In the long term, there may be a need to develop engagement strategies for other segments of the population, such as younger generations and newcomers to Canada.

Increased awareness and support for migratory bird conservation

Canadian public: Though the Canadian public has an appreciation for birds, Canadians are generally not aware that the federal government is responsible for the conservation of migratory birds.

- The MBP provides some guidance[12] and advice to the general public, in the form of guidance documents, handbooks, pamphlets and websites on the status of migratory birds and their conservation (for example, population status, legal protection, threats, species at risk and conservation actions) and management (for example, preventive and deterrence techniques for nuisance species like the Canada goose). These products are intended for a wide audience, including federal, provincial, territorial and municipal government partners, industry, hunters, private landowners and ENGOs.
- In 2016, the MBP implemented an outreach and engagement strategy to celebrate the centennial of the U.S.-Canada convention to protect migratory birds. Throughout the year, internal and external stakeholders were engaged through a series of events and promotional activities, such as Hinterland Who's Who national ad campaign and commemorative bird bands. The MBP renewed its engagement with international partners (U.S., Mexico) through the release of a vision statement on the future of migratory bird conservation in North America.
- External interviewees expressed the view that there is work to be done in raising awareness within the Canadian public. However, they acknowledged that awareness would likely be even lower without ECCC's activities.
- Interviewees felt that engagement activities have been isolated and ad hoc and that there is no overall plan or dedicated resources for public engagement.

Indigenous communities: Indigenous communities have a high level of interest in migratory bird issues, as well as in wildlife issues in general.

- Internal interviewees felt that engagement has been inconsistent and depends largely on the presence or absence of formal structures to engage, such as wildlife management boards or conservation authorities.
- Because the federal government is consulting with Indigenous groups on a broad range of issues, migratory bird considerations have to compete with other important issues.
- External interviewees suggested that there may be an opportunity for ECCC to collaborate meaningfully with Indigenous communities to inform future work with traditional knowledge, particularly in remote locations such as the Arctic.

Industry and the private sector: According to internal interviewees, awareness of migratory bird issues has increased within industry and the private sector, but the increases are sector specific. For example, there has been progress with forestry and mining companies through compliance promotion activities around incidental take. In addition, an industry-led initiative has applied migratory bird nesting information with forest geospatial data in forestry management and decision making. Some progress on migratory bird issues has also been made with the agriculture industry through habitat enhancement efforts undertaken by the Species at Risk Program.

[12] Guidance developed and promoted by the MBP, as a CWS program, includes the management of nuisance species (for example, guidelines on best practices related to destroying eggs, capturing and transportation, killing birds) and reducing risk to incidental take (for example, factsheets on incidental take, nesting periods and other risk factors).

- The Species at Risk Partnership on Agricultural Lands (SARPAL) works with the agricultural community to conserve and enhance agricultural lands critical to recovery for species at risk.
- External stakeholders pointed out that industry is often reactive rather than proactive when it comes to migratory bird issues. Potential legal ramifications may be an incentive for industry involvement.
- A positive example of industry involvement on migratory bird issues is the Wetlands Roundtable joint venture, which is entirely composed of industry and private sector representatives.

Other jurisdictions: The involvement of provincial, territorial and municipal governments and the international community in migratory bird conservation issues is discussed under section 4.1.

The value of migratory birds for Canadians

Although this is not a specific outcome of the MBP, the extent to which Canadians value migratory birds was highlighted as a particular area of interest for this evaluation. To achieve results in this area, the MBP provides funding and support to external organizations, to conduct outreach activities that promote bird conservation and citizen science initiatives. All interviewees agreed that more work needs to be done to inform the Canadian public about the specific challenges associated with migratory bird conservation to promote the value of birds.

- Survey data supports the notion that Canadians value nature, with over 89% of Canadian adults participating in some form of nature activity. Birding accounted for an average 133 days per participants who watched, or photographed birds; this average is higher than any other activity.[13]
- While interviewees held the view that Canadians value birds, they acknowledged that the general public's knowledge of the specific issues facing birds is quite low. Internal interviewees stressed the need for modernized communication products and increased public engagement and information activities. For example, both internal and external stakeholders noted the positive impact that past initiatives such as the "Hinterland Who's Who" had on sensitizing the public to conservation issues.

The evaluation evidence also provided some key statistics and trends on the levels of engagement and interest in activities directly related to migratory birds, such as birdwatching, participation in citizen science and volunteering.

- Participation in citizen science initiatives and volunteering, promoted and used by the MBP and its partners, has been increasing as more people become involved in bird watching. For example, the number of people who make a dedicated effort to view waterfowl is now ten

[13] **Federal, Provincial, and Territorial Governments of Canada. 2014.** 2012 Canadian Nature Survey: Awareness, participation, and expenditures in nature-based recreation, conservation, and subsistence activities. **Ottawa, ON: Canadian Council of Resource Ministers, p. 2.**

times the number of waterfowl hunters, and their numbers continue to grow. The observed increase in interest in bird watching and citizen science initiatives creates an opportunity to promote support for migratory bird conservation.

- There has been a large jump in volunteer participation in monitoring programs supported by the MBP and its partners. This includes formal programs such as the North American Breeding Bird Survey and less formal programs such as checklists. Both formal and informal programs have contributed to increased monitoring coverage and increased knowledge on the status of birds in Canada.
- Many of these citizen science initiatives and monitoring programs combine data collection with education and recreation, thus building public interest in bird conservation. Bird monitoring further benefits conservation by introducing the public to natural environments, educating them about ongoing threats to birds and their habitats, and training a future generation of bird banders and naturalists.
- A shift from rural to urban residence and an aging base of public support for bird conservation are key sources of concern, since there is evidence that peoples' connection to waterfowl and to the natural world more generally is rapidly eroding. Bird watching is less popular among younger generations. A new approach, with appropriate education and training materials, is therefore needed to engage young people in bird conservation efforts. Different engagement strategies will be required, depending on regional demographics, hunting traditions, perspectives about wetlands and waterfowl and other social characteristics.

3.5 Maintaining migratory bird populations at population goals

Expected result	Expectations met	Further work required	Priority attention required	Unable to assess
3.5.1 Migratory bird populations are maintained at population goals		•		

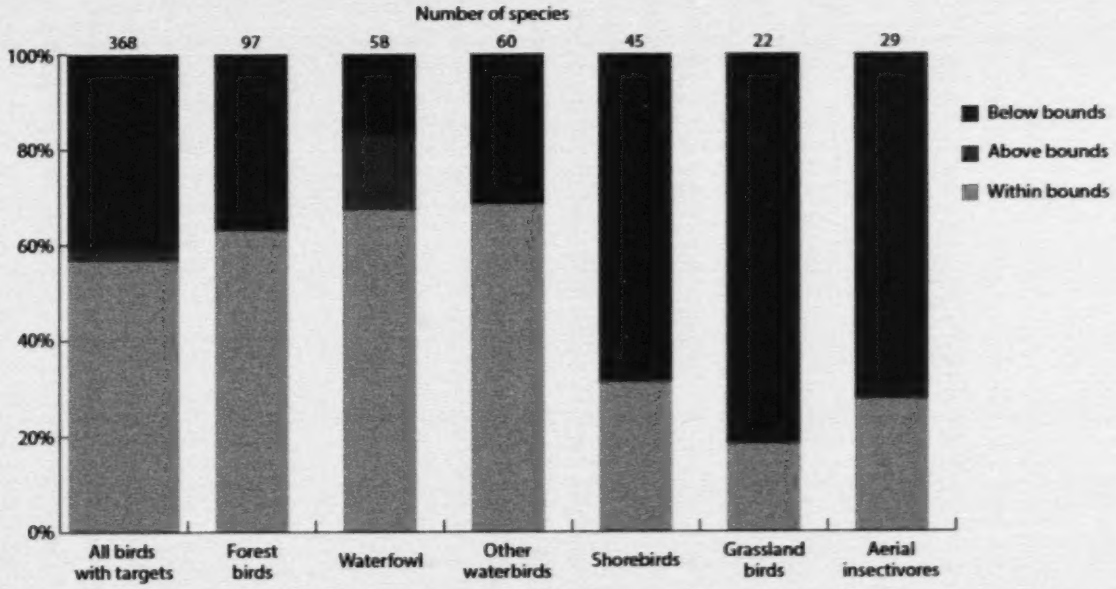
Findings: Given the large number of bird species to monitor over a large area, there is insufficient data to estimate reliable long-term trends for approximately 30% of all bird species in Canada. As far as assessing the current status of migratory bird species, 57% of the migratory species with adequate monitoring data have population sizes within an acceptable range, which means that 43% do not. This varies significantly by bird group. Waterfowl and forest bird species are more likely to be within acceptable ranges, while grassland birds and aerial insectivores have much lower proportions of species within acceptable levels.

Although the MBP collects data on this outcome, as discussed in section 3.1, significant monitoring gaps hinder the ability to fully draw conclusions. According to the Avian Monitoring Review (AMR) released in 2012, insufficient monitoring data exists for approximately 30% of bird species to adequately determine or estimate long-term trends.

The MBP plans to report on progress towards this final outcome every three years, as part of the progress on the Federal Sustainable Development Strategy (FSDS). In 2015, baseline data was reported for the goal "improve the proportion of migratory bird species that meet their population goals". As shown in Figure 3, 57% (208) of the managed migratory species populations regularly found in Canada with adequate monitoring data (368 of 420 populations)[14] have population sizes within an acceptable range; this means that 43% (160) does not.

The proportion of species with acceptable population sizes varies among bird groups. For example, most waterfowl (67%) and forest bird species (63%) are within acceptable ranges, but grassland birds (18%) and aerial insectivores or birds that catch insects while in flight (28%) have lower proportions of species with acceptable population levels. According to the 2016-19 Federal Sustainable Development Strategy, the target for this goal is to bring 59% of managed migratory bird species to acceptable population ranges by 2025.

Figure 3: population status of migratory birds, Canada, 2013



Source: Canadian Wildlife Service, Environment Canada, 2014.

Significant work remains to address the 43% of birds that do not currently have population sizes within acceptable ranges, and to obtain population data for the approximately 12% of migratory species for which sufficient information is not available to be assessed.

[14] For the purposes of the CESI indicator, the 368 migratory bird species protected under the MBCA are further divided into 420 populations, because different populations of the same species could be genetically, ecologically or geographically distinct.

4. Findings: program efficiency

This section summarizes the assessment of the efficiency of the Migratory Birds Program (MBP). The findings are based on an analysis of the MBP's: design and use of partnerships; effectiveness of its governance; use of processes and tools to enhance efficiency; and performance measurement mechanisms.

4.1 Program design and use of partnerships

Efficiency criteria	Expectations met	Further work required	Priority attention required	Unable to assess
4.1.1 Program design is appropriate for achieving intended outcomes	•			
4.1.2 External partnerships are in place and being used to efficiently and effectively deliver results		•		

Findings: The program appropriately comprises activities in many areas, including monitoring, research, conservation actions and stewardship and permitting and enforcement. However, given the program's resource levels and the federal government's role to track and provide information on migratory bird species on a national scale, resources are heavily focused on monitoring activities.

The program extends its resources and the reach of its activities by fostering and leveraging long-standing partnerships with various external organizations and other levels of government. Partnerships have been established with a number of different stakeholders, including ENGOs, other jurisdictions like the provinces and territories, and external committees. While collaboration with partners is effective, there are areas where it could be improved. In particular, collaboration at the municipal and international levels remains an important area for improvement, since partnerships with other nations and collaboration with municipalities can significantly impact population outcomes for migratory birds.

Program design

The evaluation found that the department's long-standing work on migratory bird conservation has informed the current design of the program. The MBP includes a mix of elements and activity areas, including:

- monitoring the status of populations
- expanding the base of scientific research and knowledge
- conservation actions, stewardship and policy development
- providing advice and permitting
- enforcing the MBCA and its regulations

Given the unique and fundamental role of the federal government to track and provide information on migratory bird species on a national scale, the MBP's resources are heavily focused on monitoring activities, with more than 50% of program resources allocated to this activity.

The program extends its resources and the reach of its activities by fostering and leveraging long-standing partnerships with various external organizations and other levels of government.

According to interviewees, the design is appropriate and the program achieves a lot with the resources it has been allocated, due in large part to the use of partnerships. However, not all elements are appropriately resourced to make significant progress towards some intended results. According to key informants, more work could be done in the areas of scientific research, compliance promotion, public outreach and stewardship.

Delivery through partnerships

The MBP is delivered in partnership with many organizations, including environmental non-governmental organizations (ENGO), external committees and governments representing various jurisdictions.

Environmental non-governmental organizations

The MBP maintains long-standing, effective working relationships with many Canadian and U.S. ENGOs such as Ducks Unlimited Canada (DUC), Bird Studies Canada, Wildlife Habitat Canada, Nature Canada and Manomet. The MBP collaborates with these organizations on monitoring and data collection, conservation efforts, data dissemination and public outreach, research and citizen-science initiatives. A network of ENGOs has the capacity and interest to increase awareness and, where feasible, advance migratory bird conservation efforts. Partnering with these organizations on key initiatives and shared priorities enables the MBP to leverage external capacity and expertise and reduce costs associated with program delivery.

Partnerships with ENGOs are particularly important at the international level, where work is mainly conducted by large ENGOs. For example, such partnerships have been helpful for undertaking monitoring surveys, analysis of monitoring data and other research on North American shorebirds. This research on shorebirds that have an extensive range and migrate over very large distances has been particularly valuable.

External committees

Program managers were of the view that ECCC should increase participation and resources devoted to external committees in order to advance its interests more effectively and have more influence on decision making related to migratory birds. Currently, other organizations, such as DUC, and the U.S. government are the main source of leadership within these external bodies.

The **North American Waterfowl Management Plan** (NAWMP) is considered highly effective in its mandate for waterfowl (see section 3.2). Program managers view NAWMP as a best practice in conservation partnerships and some expressed the view that the success and prominence of NAWMP have positive repercussions on migratory bird conservation more broadly.

The Black Duck Joint Venture, carried out under NAWMP, has proven to be an efficient collaboration between the Canadian and American federal governments and external organizations. The Black Duck saw steady population decline beginning in the 1950s. The Black Duck Joint Venture was established in 1989 to monitor population trends and to identify threat factors with the goal of restoring the population levels.

The **North American Bird Conservation Initiative (NABCI)** was relatively dormant over the evaluation timeframe, mainly because of a lack of resources and a clear mandate; currently, the mandate is all migratory and non-migratory birds. According to program managers, efforts should be made to build on the NABCI framework, which includes the direct involvement of forestry, mining and petroleum industry stakeholders, and the organization's ability to bring different stakeholders together.

Flyway councils were seen by program managers as highly effective mechanisms to advance the "continental approach" to migratory bird conservation and management. They are considered effective in promoting targeted discussions and priority setting around regulations. These councils are funded in large part through the U.S.

Other important initiatives with external partners include: Canada's contribution as Chair of the Arctic Council to prioritize the Arctic Migratory Birds Initiative (AMBI); the Canada Warbler International Conservation Initiative; Partners in Flight (PIF); and the Western Hemisphere Shorebird Reserve Network.

Other jurisdictions

Other federal government departments: Many internal and external interviewees noted that the MBP would benefit from greater involvement from other government departments. In particular, program managers identified that Agriculture and Agri-Food Canada, Natural Resources Canada and the Department of Fisheries and Oceans should be more involved because activities that fall under their mandate, including those conducted by their stakeholders, impact birds and bird habitat. Though some of these departments take into account the needs of migratory birds in their work, program managers believe that stronger leadership and engagement from ECCC is needed to introduce a more integrated approach to working on habitat management and bird conservation across departments.

International collaboration: Other than its participation in NAWMP, the MBP has not been particularly effective at fostering sustained collaboration internationally. The main reasons cited for this was an overall lack of dedicated funds for international work, as well as a lack of funds available in other countries. Most of this work is funded through ad hoc G&Cs and contracts. Of the 99 G&C projects funded by the MBP between fiscal year 2011 to 2012 and fiscal year 2015 to 2016, only six, representing 2% of total G&C funding, had a component that required international collaboration. These six projects addressed issues such as sharing information with and transferring technology to international partners, providing training for migratory bird monitoring abroad and assessing threats faced by migratory birds in other countries.

Provinces and territories: Findings were more positive regarding collaboration with the provinces and territories, although some areas for improvement were noted. The level of provincial and territorial involvement tends to be higher for waterfowl or hunted species than for other groups of birds. Interviewees noted a need to get deeper buy-in from the provinces and territories on all bird groups, as well as on a wider range of conservation issues. In particular, many industries, as well as land use in general, are regulated by the provinces and territories. A few managers indicated that a revitalized NABCI could be an appropriate venue to collaborate further with the provinces and territories. Government partners highlighted the positive relationship between ECCC and the provinces and territories on the issue of harvest management.

Municipal-level collaboration: Interviewees indicated that collaboration at the municipal level needs to be improved. Much of the implementation of conservation actions and behavioural changes require buy-in and support from municipalities. This is particularly the case when addressing the causes of bird mortality raised in the review of human-induced avian mortality. Individuals and organizations that are involved in land-use planning at the municipal level are not well-represented among the partners engaged in the MBP.

4.2 Governance structure

Efficiency criteria	Expectations met	Further work required	Priority attention required	Unable to assess
4.2.1 The governance structure and responsibilities and accountabilities are clear and appropriate		•		

Findings: The MBP's governance structure comprises several cross-cutting technical committees that provide input to higher level committees. It is clearly defined and viewed as an appropriate model for the program. Following a reorganization in April 2016, the evaluation identified some issues related to prioritization and communication. However, since the organizational changes were still very new at the time that these issues were identified, it was not possible to determine if they were inherent to the structure or if insufficient time had passed for the program to adapt to the new changes.

Governance structure

The MBP operates within a committee structure that is intended to be "bottom-up", with five technical committees representing the four bird groups and an avian monitoring committee. These committees provide baseline information on all bird groups and input on bird conservation issues to higher-level committees. Higher-level committees, such as the Migratory Bird Sub-Activity Committee and the Canadian Wildlife Service (CWS) Executive Committee, can also send questions to the technical committees for clarification or investigation.

- The technical committees were viewed to be very effective and essential to the operation of the program, since they identify where issues are developing and the actions that need to be

taken. Additionally, it is at these committees that those who work on different aspects of migratory bird issues come together, including researchers from ECCC's Science and Technology Branch.

In April 2016, following an internal review, CWS was reorganized to better align the branch's strategic direction, improve integration with stakeholders and address resource issues. CWS activities are now organized to undertake concerted action for focal landscapes, species and threats using integrated, multi-species approaches. During the evaluation, internal interviewees raised several issues related to prioritization and communication within the new organization structure. It was still relatively new at the time of data collection for the evaluation, so it is unclear to what degree the issues identified are inherent to the new structure or if there had just not yet been enough time to adapt to the changes. Issues identified included the following.

- There is a lack of clarity on communication to senior levels and uncertainty about roles and responsibilities for implementing key pieces of legislation, such as the Migratory Birds Convention Act (MBCA) and the Species at Risk Act (SARA). Concerns were raised that SARA priorities often overshadow MBCA priorities. While not directly related to the reorganization, concerns were also raised that ECCC senior management could be better informed of the priorities of the MBP, including the ecological importance of migratory birds and the necessity of a robust monitoring program.
- Program managers believe that senior level committees do not fully leverage the technical committees, which should be included more frequently in strategic discussions.
- Interviewees also indicated that since the reorganization, there is some confusion regarding priority setting among program elements such as scientific researchers, wildlife enforcement managers and dedicated migratory birds program staff in CWS.
- Program managers noted that there has been a decrease in communication between program staff executing different components. Heavy workloads and increased administrative burden leave little time for coordination with other program employees.
- The strength of the linkages among program elements varies from one regional office to another because of differing regional priorities, such as oil sands or other natural resource development and species at risk unique to the region. However, channels of communication between the regional offices and program headquarters were for the most part highlighted as being effective, allowing regional staff to provide input on policy decisions.

These issues should be monitored closely to identify whether they are related to the recent organizational changes or if action may be required.

4.3 Processes and tools

Efficiency criteria	Expectations met	Further work required	Priority attention required	Unable to assess
4.3.1 The program makes use of processes and tools to improve efficiency	•			

Findings: The MBP researches and makes use of new technologies such as remote sensing technology and automatic recording units. The program also uses tracking devices to collect monitoring data that would previously have been cost prohibitive. It also supports and draws on citizen science to enhance the efficiency of the program.

In addition to making use of partnerships, other efficient practices used by the MBP include the following.

- **Citizen science initiatives**, supported through G&C funding, allow ENGOs to engage volunteers in data collection on bird populations. These initiatives are a fundamental aspect of the monitoring program. In some regions and for some bird species, citizen science is the primary method for collecting data. Relying on volunteers is economically efficient and encourages Canadians to become engaged in migratory bird conservation efforts.
- **New technologies and methods** enable the MBP to obtain monitoring information from areas that are difficult to access. In the past, this data had been cost prohibitive to collect. In some cases, technological approaches reduce the need to send biologists into the field, including in areas where there are risks to biologists conducting field work. Emerging technologies may be particularly important to fill key gaps in the monitoring program and may become increasingly important as the technologies evolve (for example, the size and weight of tracking devices continue to decline and battery life increases). Examples of the use of technologies for monitoring include remote sensing technology, automatic recording units, smaller tracking devices, use of weather radar and monitoring of bird locations using cellphone transmitters. Ten G&C projects related to enhanced monitoring technologies were completed over the evaluation timeframe. O&M resources were also used to explore new technologies. Fourteen of the 99 G&C projects completed over the evaluation timeframe focused on enhancing the efficiency of program activities, including projects that advance new monitoring technologies.
- **E-permitting** for hunting is a highly efficient way for regulatees to obtain hunting permits. However, this efficiency for regulatees comes at the expense of the collection of identifying information on the regulatees, due to privacy concerns. As well, other types of permits that are issued through the MBP, such as taxidermy, aviculture or scare permits, are not currently available through E-permitting, and requests are not processed with the same level of efficiency. Measures have been taken to improve processing of these permits in the absence of an online permitting system. Service standards and performance targets for all six permits,

namely taxidermy, aviculture, damage and danger, scientific, airport and eiderdown, were established by the MBP in 2013 and 2014, to improve delivery and measure performance.[15]

4.4 Performance measurement

Efficiency criteria	Expectations met	Further work required	Priority attention required	Unable to assess
4.4.1 Performance data is collected and used in decision making		•		

Findings: The MBP does not formally collect or systematically compile operational and performance data on most of its activities and progress on intended results. The evaluation found a few key areas, however, where data is being collected, including assessments of the strength of the program's monitoring activities, indicators for departmental reporting and service standards for permitting. A review of the program's performance measurement processes is ongoing as part of the implementation of the TB Policy on Results. As a result, no recommendation has been made in this area.

The Avian Monitoring Review (AMR), which ECCC undertook in 2012, was found to be of value in that it provided performance data on the coverage and precision of ECCC's monitoring program. Evidence suggests this information is helping to guide improvements. In 2013, the program implemented several AMR recommendations, such as creating an additional technical committee on avian monitoring, exploring the use of technology to fill regional monitoring gaps and other survey improvements and transferring resources to bird groups other than waterfowl that require critical attention.

Since setting the service standards for all migratory bird permits in 2013, performance data is collected and reported annually online. A review of the service standards in 2016 led to shorter permitting timelines and higher targets across all permits issued by the MBP. Another review is anticipated for 2019.

The program had also developed a detailed logic model; however, only partial data was collected against its indicators and outcomes.

- In the Departmental Results Reports (DRR) for the period from fiscal year 2011 to 2012 to fiscal year 2016 to 2017, the MBP reported against an indicator on the number and trends of at-risk migratory bird species (discussed in section 3.2).
- The MBP also reports against an indicator in the 2015 Progress Report on the Federal Sustainable Development Strategy (FSDS) on the number of managed migratory bird species

[15] ECCC. 2017. Standards and Performance of Migratory Birds Regulations Permits.

with population sizes within an acceptable range, overall, and by bird group (discussed in section 3.5). This indicator will continue to be measured in the next phase (2016 to 2019).

As part of the ongoing implementation of the TB Policy on Results, the MBP is working on incorporating its program activities into the development of a Performance Information Profile (PIP).

5. Conclusions, recommendations and management response

5.1 Conclusions

Relevance

The Migratory Birds Program (MBP) responds to the continued need to address the increasing threats posed to migratory bird populations, research and monitor populations and trends and engage in international collaboration on migratory bird issues to conserve and protect migratory birds. The MBP is aligned with government priorities and supports the federal government in meeting its obligations under the Convention for the Protection of Migratory Birds in Canada and the United States and the Migratory Birds Convention Act, 1994, as well as other key federal legislation related to the environment, wildlife and wildlife areas, species at risk, enforcement and environmental assessment.

Performance – expected results

Knowledge and data about migratory birds

As a main area of focus for the MBP, extensive information and data are generated through monitoring and research. However, significant gaps on status and trends still exist, mainly for non-waterfowl species. The MBP's monitoring data is generally viewed to be of high quality, and the program has developed information products. However, there has been minimal promotion or uptake of some of the available information. As well, inefficient data management and dissemination practices inhibit the flow of information to the stakeholders who need it to take action.

Protecting birds and their habitat

Much habitat protection work does not fall under federal jurisdiction. As such, it requires the implementation of effective partnerships, such as with the North American Waterfowl Management Plan (NAWMP), which has been very effective in addressing habitat for waterfowl populations. More work is required to address the causes of habitat loss for other bird species.

Over the evaluation period, the evaluation team observed an increase in support for and consideration of migratory bird issues from certain large industrial sectors, particularly related to the issue of incidental take. The need for continued work in this area remains. More effort is also needed to address other threats to migratory birds, such as threats from development projects and toxic substances and threats in other countries. Areas for improvement include the need for increased engagement with municipalities and international jurisdictions.

Hunting and human interaction with migratory birds

Hunting regulations have been effective for keeping harvests of migratory birds at sustainable levels. The effectiveness of hunting regulations can be attributed to the strong focus on monitoring harvested species, which is essential to informing the biennial updates to the regulations.

Steps are being taken to address the issue of bird populations that cause damage or danger. Despite certain challenges, the MBP has made progress in this area, particularly at airports and in the case of human-related conflict. Challenges are ongoing with the management of certain overabundant populations, such as the Central and Western Arctic populations of Snow Geese.

Awareness and value of migratory birds to Canadians

Canadians generally value birds, and the public is increasingly engaged in citizen science and volunteering. However, knowledge of specific conservation issues affecting migratory birds is seen to be quite low.

Given that positive conservation outcomes inherently rely on changes in public and stakeholder behaviours, the MBP conducts some stakeholder and public outreach. However, this was identified as an area of weakness for the program, since there is no overarching stakeholder engagement plan and these activities are currently conducted on an ad hoc basis. Two particular areas of concern highlighted by interviewees were municipal and international engagement.

Maintaining migratory bird populations at population goals

Given the large number of bird species to monitor over a large area, there is insufficient data to estimate long-term trends for approximately 30% of all bird species in Canada. For those migratory species for which adequate monitoring data is available, 57% have population sizes within an acceptable range, and 43% do not. This varies significantly by bird group. Waterfowl and forest bird species are more likely to be within acceptable ranges, while grassland birds and aerial insectivores have much lower proportions of species within acceptable levels.

Performance – program efficiency

The MBP maintains and leverages long-standing, effective relationships with major environmental non-governmental organizations to carry out conservation actions, data collection, research, data dissemination and public outreach. Collaboration at the municipal and international levels remains an important area for improvement, since partnerships with other nations and collaboration with municipalities can significantly impact population outcomes for migratory birds.

The MBP researches and makes use of new technologies such as remote sensing technology and automatic recording units. The program also uses tracking devices that enable the collection of monitoring data that would have previously been cost prohibitive. It also supports and draws on citizen science to enhance the efficiency of the program.

The MBP's governance structure is clearly defined and viewed as an appropriate model for the program. Following a reorganization in April 2016, some issues related to prioritization and communication were identified. Given that the organization had not yet had time to settle into the

new structure when these issues were identified by the evaluation, no recommendation is being made at this time related to governance. It is suggested, however, that these issues be closely monitored.

The MBP does not formally collect or systematically compile operational and performance data on most of its activities and progress on expected results. However, it collects data in a few key areas, including its monitoring activities, enforcement statistics and service standards for permitting. A review of the program's performance measurement processes is ongoing as part of the implementation of the TB Policy on Results.

5.2 Recommendations and management response

The following recommendations are addressed to the Assistant Deputy Minister (ADM) of the Canadian Wildlife Service, working in collaboration with the ADM Science and Technology Branch, as appropriate:

Recommendation 1

Recommendation 1: take steps to address current gaps in migratory bird monitoring data.
There is insufficient monitoring data to adequately estimate long-term trends for 30% of bird species populations that regularly occur in Canada, including many migratory bird species. Without information about population trends for many species, ECCC cannot assess the risk of extinction or gauge progress towards recovery, fully identify potential threats in Canada or in wintering habitats, ensure that migratory birds are adequately considered in environmental assessments, determine appropriate conservation actions or set population goals. A greater availability of monitoring data would allow the MBP to more appropriately manage migratory bird populations and habitats, as well as measure progress towards meeting expected outcomes.
Statement of agreement or disagreement
The Assistant Deputy Minister of the Canadian Wildlife Service agrees with the recommendation.
Management response
Through the Avian Monitoring Review (2012) and subsequent work by the Avian Monitoring Committee (AMC), ECCC has worked to maximize the efficiency and coverage of its existing bird monitoring programs, but recognizes that there are still significant gaps. Fully addressing all of these gaps will not be possible without significant new resources, but we have identified four areas with high risk gaps where we will take steps to reduce the gaps in context of resources currently available: shorebirds, boreal forest birds, colonial seabirds, and sea ducks. Shorebirds face a particularly high risk, as several species are already listed under SARA or are potential candidates for COSEWIC evaluation. To enhance understanding of shorebird status, we propose to complete an analysis of the first round of Arctic breeding ground surveys, including a strategy for future surveys; and also complete an evaluation of approaches to enhance migration

surveys.

Boreal forest birds represent a particular challenge, because the vast size and limited accessibility of the boreal forest require substantial resources for comprehensive on-the-ground monitoring. CWS is developing a flexible and adaptable boreal bird monitoring strategy incorporating innovative approaches, such as new technologies and partnerships, to address risks.

For colonial seabirds, the highest risk gaps are associated with poorly surveyed major Arctic breeding colonies, where climate change and increased human activity pose threats. ECCC will focus efforts on surveying selected high priority colonies identified in the recently completed colony monitoring strategy.

Sea ducks are relatively heavily exploited, both by Indigenous and recreational hunters, but there is much uncertainty on population sizes, creating risks of over-exploitation. ECCC, with support from the Sea Duck Joint Venture, will complete a three-year pilot survey of scoters to provide a preliminary estimate of current population sizes and inform design of a potential future operational survey.

Deliverables	Timeline	Responsible party
Report on analyses of Arctic shorebird **breeding** surveys with recommendations for future surveys	December 2019	Assistant Deputy Minister (ADM), Canadian Wildlife Service (CWS)
Report on evaluation of shorebird **migration** surveys	December 2020	ADM, CWS
Completed boreal bird monitoring strategy incorporating innovative approaches and partnerships	March 2020	ADM, CWS
Completed surveys of selected high priority Arctic seabird colonies	December 2019	ADM, CWS
Completed report on pilot surveys for monitoring breeding sea ducks (scoters)	March 2020	ADM, CWS

Recommendation 2

Recommendation 2: develop and implement improved internal data management systems for the scientific data generated by the Migratory Birds Program.
The evaluation identified a critical need to improve data management within ECCC for the extensive amount of information generated by the Migratory Birds Program (MBP). There is currently no modern integrated data management system in place. As a result, there is no accurate estimate of the amount of information that could be available for use within the program or to support external initiatives. Modernizing data management would improve data accessibility across the program, support collaboration and information sharing and ensure that data is stored and protected for the longer term. It would also facilitate overall assessments of the MBP's performance.
Statement of agreement or disagreement
The Assistant Deputy Minister of the Canadian Wildlife Service agrees with the recommendation.
Management response
Some advances have recently been made in relation to data management within ECCC, as well as within CWS. CWS has put in place a Data and Information Management Committee that has manager-level representation from each division and each region, supported by a data management working group. CWS has also created the first version of a centralized data management system of geospatial data that allows regional offices and NCR to seamlessly merge and share geospatial datasets (that is, the Geospatial Knowledge Management Initiative [GKMI]). Priorities for the medium term include completing a detailed needs assessment related to the evolution of the centralized data management system (GKMI), to ensure that it responds to needs from across all CWS program areas and regions while also taking full advantage of available database capacities. The needs analysis will consider systems and structures that will need to be created or enhanced within CWS as well as efforts that would need to be advanced by CSFB or SSC*. The degree to which and pace at which the needs assessment can be advanced will depend on resources available to support this effort. Priority will be placed on placing a larger portion of CWS's data on centralized databases, as well as on open data platforms, as appropriate. CWS will also advance a pilot project (Ground to Cloud) that will consider whether there are opportunities to better leverage technologies and stakeholders, to reduce the lag time and processing effort between the data collection (that is, field work) and the integration of data into a national database. *Critical to successfully advancing this recommendation is the support provided by others within ECCC, most notably Corporate Services and Finance Branch (CSFB) and other federal departments, most notably Shared Services Canada (SSC).

Deliverables	Timeline	Responsible party
Complete inventory of CWS data holdings, along with targets related to the inclusion of new datasets in centralized data management systems	March 2019	Director General (DG), Assessment and Regulatory Affairs Directorate (ARAD), Canadian Wildlife Service (CWS)
Complete needs assessment to inform the enhancement and design of centralized data management systems	March 2020	DG, ARAD, CWS
Complete pilot project implementing opportunities to modernize CWS field data collection through the use of digital technology (i.e., "Ground to Cloud" project)	September 2020	DG, ARAD, CWS

Recommendation 3

Recommendation 3: improve the dissemination of program knowledge and data to stakeholders and partners, to allow them to make greater use of available knowledge when planning and undertaking conservation actions.

The Migratory Birds Program (MBP) relies on the uptake and use of program knowledge and data by partners working in conservation, such as environmental non-governmental organizations, to encourage conservation actions that are based on the best available science and data and aligned with program priorities.

The program has generated some valuable information products, like the Bird Conservation Regions strategies, and it contributes scientific knowledge to large-scale studies, such as State of the Birds 2012 Report) However, the evaluation found that the MBP also possesses other valuable data that is not currently being shared in a systematic manner.

Improving the dissemination of knowledge and data would increase the degree to which interested partners and external stakeholders make use of this knowledge when planning their conservation actions. It could also have the added benefit of expanding the knowledge base as partners and stakeholders contribute their learnings to the base of knowledge.

Opportunities exist to make better use of existing scientific data dissemination initiatives, such as the Federal Geospatial Platform, and modernizing the tools and mechanisms used for knowledge sharing.

Statement of agreement or disagreement

The Assistant Deputy Minister of the Canadian Wildlife Service agrees with the recommendation.

Management response

Many elements of recommendation #3 depend on successfully advancing recommendation #2 in that the ability to make data available to other Departments and external audiences, including via the Federal Geospatial Platform, requires that the data first be made available across CWS given the data work flow established by ECCC.

CWS has invested energy in the dissemination of data and knowledge and increasing its uptake by decision makers. Nonetheless, important gaps remain and effort will be directed to filling priority gaps as resources allow. CWS will continue to prioritize the communication of information on the health of bird populations within Canada including directing efforts towards making more data available to the public. CWS will produce a State of Canada's Birds report in 2018. This will represent an update to previous "State of Canada's Birds" reports that relay important information to decision makers and the general public on the health of Canadian birds. CWS has also invested in disseminating web-based information on how to avoid harm to birds including providing information on when different species are likely to be nesting in different parts of Canada. CWS will continue to update the information available on the website to reflect new information, and will engage directly with key stakeholders interested in providing advice on how to reduce adverse impacts on migratory birds.

Ensuring the effective and efficient dissemination of program knowledge and data will facilitate and enhance the shift to priority places, species and threats, enabling stakeholders and partners to combine their information and knowledge with that of CWS, to improve planning and actions to improve conservation outcomes. Improved dissemination of program knowledge and data will also advance the Government of Canada's renewed priority of regional environmental impact assessments and addressing cumulative impacts of activities within an area which in turn will also improve conservation outcomes in the long term. CWS will continue to make additional priority CWS datasets available on Open Data platforms each year, beginning in fiscal year 2018 to 2019, and will continue to advance efforts to enable additional priority datasets to be made available.

Deliverables	Timeline	Responsible party
Updated State of Canada's Birds report in collaboration with the North American Bird Conservation Initiative (NABCI) Canada, a multi-stakeholder body with representatives from federal, provincial and territorial, industry and environmental non-government organizations that work collaboratively, in Canada and internationally to achieve integrated hemispheric all bird conservation.	December 2018	Director General (DG), Assessment and Regulatory Affairs Directorate (ARAD), Canadian Wildlife Service (CWS)
Additional priority CWS datasets available on Open Data platforms each year	March 2019	DG, ARAD, CWS
Updated information related to migratory bird conservation issues disseminated through social media, web, and targeted emails.	December 2018 – March 2021	DG, ARAD, CWS

Recommendation 4

Recommendation 4: review current stakeholder engagement and outreach processes and develop a strategy to enhance awareness and educate the different stakeholder groups on issues affecting migratory birds.

The Migratory Birds Program (MBP) has had varying degrees of success in engaging the different stakeholders in migratory bird conservation and management and in raising awareness of the issues affecting migratory birds.

Engagement of and collaboration with the provinces and territories and environmental non-governmental organizations is considered quite strong. Opportunities were identified, however, to improve the level of engagement with other key stakeholder groups.

Strong stakeholder engagement is critical to the achievement of migratory bird conservation outcomes and also enhances the efficiency of program delivery.

The program should consider targeted strategies and mechanisms to address key stakeholder groups, such as international organizations, municipalities, Indigenous groups and the public, on key issues affecting migratory birds, such as incidental take and habitat loss.

Statement of agreement or disagreement

The Assistant Deputy Minister of the Canadian Wildlife Service agrees with the recommendation.

Management response

CWS recognizes that enhancing awareness of migratory birds and their conservation by different stakeholder groups is an essential component of the program's continued success. Therefore, CWS will prepare a strategy that addresses the approach for engagement with Indigenous people and the following stakeholder groups: general public, North American Bird Conservation Initiative (NABCI), municipalities, other government departments (OGDs), and international partners.

The engagement strategy will include specific targeted activities that will be undertaken with each group. These activities will primarily include strategic meetings and presentations, engagement through social media, and collaboration with key partners. This engagement strategy will consider how to advance migratory bird conservation outcomes in context of place-based, priority species and threats-based strategies.

Deliverables	Timeline	Responsible party
An approved stakeholder engagement strategy that includes approaches designed specifically for each of the following groups (general public, NABCI, municipalities, OGDs, international, and Indigenous peoples).	December 2018	Director General (DG), Assessment and Regulatory Affairs Directorate (ARAD), Canadian Wildlife Service (CWS)
Implementation of the approved engagement strategy.	Annually, beginning in 2019	DG, ARAD, CWS

Appendix A: program description

Legislative context

Migratory Birds Convention

The 1916 Migratory Birds Convention (MBC) between Canada and the United States (U.S.) grew out of a common desire to protect and prevent the further extinction of birds that migrate between the two countries. When first signed, the MBC represented an innovative step forward in establishing cooperative efforts for nature conservation on an international scale. The MBC also recognized the role of federal governments in the conservation of those birds that regularly migrate across provincial, territorial, state and international boundaries (since most other wildlife and habitat conservation falls under the jurisdiction of the provinces and territories).

Migratory Birds Convention Act, 1994 and its Regulations

The purpose of the Migratory Birds Convention Act (MBCA) is to implement the MBC in Canada by protecting and conserving migratory birds (both as populations and individual birds) and their nests and eggs. When the MBCA first came into force in 1917, the focus was on co-managing the continental game bird harvest with the U.S. and protecting individual birds and nests from harm. In 1995, the Parksville Protocol was negotiated to reaffirm and modernize the MBC. There was a need to reflect Indigenous and treaty rights and agreements in Canada, to clarify conservation principles, including to provide for the habitat necessary for migratory birds, and to provide other updates such as those related to the taxonomy of migratory birds described under the MBC's Article I. Amendments to the Act in 2005 strengthened the comprehensive approach required for conserving or maintaining the sustainability of migratory bird populations.

Under the MBCA, the Migratory Birds Regulations create prohibitions to protect migratory birds and their nests and set the conditions for issuing permits. Permits are provided for various activities that can affect migratory birds and their nests. Activities permitted with specific conditions include:

- Hunting - Permits are issued to allow for the hunting of migratory birds. Hunting regulations are specific to each province and territory. Migratory bird hunting permits are sold according to the conditions of the regulations.[16] Portions of the regulations, including season dates, bag limits and special conservation measures for overabundant species, are updated every two years.
- Damage or danger – Permits are provided to allow for the scaring using a firearm or aircraft, relocation or killing of migratory birds or the destruction of their eggs or nests, if the birds are causing or likely to cause damage to crops or property or, in some cases, if birds may cause injury to public health or threaten human safety. Scaring of migratory birds that are

[16] A Canadian Wildlife Habitat Conservation Stamp is also required to be purchased with the permit. The proceeds from the stamp are provided to Wildlife Habitat Canada as a contribution for conservation. This portion of the program is not included in this PAA element but is part of 1.1.4 Habitat Conservation Partnerships.

causing or are likely to cause damage to crops or other property does not require a permit if a firearm or aircraft is not used.

- Scientific research – Permits are issued to allow for the kill, capture, take or rehabilitation of a migratory bird, egg or nest for scientific or educational purposes.
- Aviculture – Permits are issued to buy, sell, possess or transport live migratory birds or their eggs for the purposes of aviculture (that is, the practice of keeping and breeding birds).
- Airport – Permits are provided to allow for the scaring or killing of migratory birds that are considered to be a danger to aircraft operating at the airport.
- Taxidermy – Permits are provided for the taxidermy of lawfully hunted migratory birds and specimens.
- Eiderdown – Permits are provided to allow for the collection, possession, sale or transport of eiderdown.

User fees may be charged for permits, as specified in Schedule II of the regulations.

There are no provisions in the MBCA to allow for the issuance of permits for incidental take. As such, this issue is currently addressed through the use of guidelines and beneficial practices.

Program activities

Program activities focus on the monitoring, protection and conservation of migratory bird populations. The MBP allows for continued work to sustain healthy populations of migratory birds including the continued development of an improved regulatory framework under the MBCA and associated monitoring and science support. The program also collaborates with other jurisdictions and other countries to ensure that conservation and protection efforts are coordinated.

The two largest areas of activity relate to migratory bird monitoring and harvest management:

- **Monitoring** allows the MBP to understand the status of migratory birds and to inform other program decisions, such as bag limits for hunting permits, conservation actions required). Monitoring is done by CWS and in co-operation with other external groups and volunteers across Canada.
- Historically, the focus of **harvest management** efforts has been on harvested species, such as game birds and the provision of hunting regulations and permits); more recently, however, the MBP has also been focusing on other sources of bird mortality (especially of non-game species) and habitat conservation.

Two important recent initiatives have been undertaken to guide program activities:

1. A review of migratory bird monitoring activities was completed in 2012 to rationalize monitoring efforts and ensure alignment with changing threats to populations.

2. Twenty-five (25) Bird Conservation Regions (BCR) strategies were completed to guide conservation actions under the mandate of the MBCA, and which provide direction within 12 physiographic landscape units.

Governance and management

Governance

Overall accountability for the delivery of activities under the MBP rests with the Assistant Deputy Minister of the Canadian Wildlife Service (CWS). The position of Assistant Deputy Minister of CWS was created in April 2016 following a restructuring of CWS. Prior to April 2016, overall accountability for the delivery of this program rested with the Director General of CWS. Delivery of program activities is through CWS (both in the national and the six regional offices), the Wildlife and Landscape Science Division (WLSD) of the Science and Technology Branch (STB) and Enforcement Branch, who is responsible for the enforcement of the MBCA and its regulations. The following teams are involved in the delivery of the MBP:

- CWS Regions, namely Atlantic, Québec, Ontario, Prairie, Pacific, Northern
- CWS - Wildlife Program Support (Wildlife Management and Regulatory Affairs as of April 18, 2016)
- CWS - Habitat Conservation and Management (Stewardship as of April 18, 2016)
- CWS - Population Conservation and Management (Assessment and Recovery Planning as of April 18, 2016)
- STB – WLSD (primarily the Wildlife Research Division)
- Enforcement Branch (Wildlife Enforcement Directorate)

Governance of the MBP includes the following formal and supporting and advisory structures.

Formal structures

Canadian Wildlife Service

The CWS Executive Committee oversees most aspects of the MBP plan with O&M, G&C and capital resources allocated by the Program Alignment Architecture program activity.

Science and Technology Branch

The Wildlife and Landscape Science Division (WLSD) Executive Committee oversees the delivery of research results integral to the success of the Migratory Birds Program.

Migratory Birds Conservation Sub-activity Committee

Co-chaired by the Director of the Population Conservation and Management Division and a Regional CWS Director (and co-chaired by the Director of Wildlife Management and Regulatory Affairs Division and Wildlife Research Director since April 18, 2016), with managerial representation from

WLSD,[17] the Migratory Birds Sub-Activity Committee is primarily a planning committee for the Migratory Birds Program. The group is responsible for national program management decisions and direction (for example, Migratory Birds sub-program budget allocation), as well as decisions and direction for key program areas and projects. Senior management updates on new developments that could affect the sub-program (for example, from the CWS Executive Committee or the WLSD Executive) are also raised at this committee. It reports formally to the CWS Executive.

Five technical committees support the Migratory Birds Sub-Activity Committee:

- Waterfowl Technical Committee
- Landbirds Technical Committee
- Waterbirds Technical Committee
- Shorebirds Technical Committee
- Avian Monitoring Committee

Four of these sub-committees reflect the four main bird species groups, and are long-standing technical committees. The Avian Monitoring Committee was created following the completion of the Avian Monitoring Review in 2012, to advise on the overall use of monitoring resources through periodic reviews and assessments of programs.

The role of each of these committees is to provide a forum for scientists working on birds to coordinate activities, exchange techniques and develop bird conservation strategies and actions. The committees also address program-wide issues and identify opportunities related to migratory bird science and conservation.

The sub-committee structure is intended to ensure national consistency in science, monitoring and wildlife management planning and delivery within bird species groups.

Other working groups and sub-committees also exist, including the Incidental Take Working Group.

Supporting and advisory committees

In addition to the formal governance structures, there are a number of key national and bilateral (Canada-U.S.) groups that play a supporting and advisory role in the delivery of the Migratory Birds Program. These include:

- Canadian Wildlife Directors Committee
- North American Bird Conservation Initiative (NABCI) Canada Council
- Flyway Councils (state and provincial membership)

[17] As of May 2016, the Migratory Birds Sub-Activity Committee has been co-chaired by the Director, Wildlife Management and Regulatory Affairs and the Director of the Wildlife Research Division.

- Canadian Council of Ministers Responsible for Conservation, Wildlife and Biodiversity
- North American Wetlands Conservation Council (NAWCC-Canada)
- NAWMP Committee
- NAWMP Joint Venture Management Boards

ECCC also participates in a number of international committees for the international management of migratory birds. ECCC works within the following organizations to ensure that international program objectives are aligned and that the delivery of programs to manage migratory bird species is integrated:

- Trilateral Committee for Wildlife and Ecosystem Conservation and Management
- Association of Fish and Wildlife Agencies
- NABCI Trinational Committee
- Western Hemisphere Migratory Species Initiative
- Partners in Flight Council
- Western Hemisphere Shorebird Reserve Network Council
- Waterbird Conservation for the Americas Council
- The Arctic Council's working group for the Conservation of Arctic Flora and Fauna

Partners and stakeholders

Key partners and stakeholders of the Migratory Birds Program include federal departments and agencies; Provincial and territorial governments; International governments; Indigenous organizations and governments; Non-government organizations (NGOs); Academia; Volunteers; and Hunters.

Expected results

For the purposes of this evaluation, program performance was assessed against eight expected results statements which were then grouped into the broad outcome themes set out in below. The eight expected results statements and their mapping to the outcomes in the program's logic model can be found in Appendix B. The following program expected results themes were used in this evaluation

- Knowledge and data about migratory birds
- Protecting birds and their habitats
- Hunting and human interaction with migratory birds
- Threats to public health and safety and economic loss due to migratory birds are reduced
- Awareness and value of migratory birds to Canadians

- Maintaining migratory birds at population goals (Long-term outcome)

The expected results for the Migratory Birds Program, as noted in the Departmental Performance Measurement Framework (PMF) for fiscal year 2015 to 2016 include:

- Migratory bird populations maintained at population goals.
- Data are available to manage and assess bird populations.

Resource allocation

ECCC's total program expenditures for fiscal year 2011 to 2012 to fiscal year 2016 to 2017, by branch, are presented in Table 1.

Core program delivery is provided by the CWS (83% of program expenditures) and STB (15% of expenditures). Expenditures mapped to Corporate Services and Finance Branch (CSFB) are generally for information management (for example, e-permitting, Status of Birds database, National Harvest Survey).

Overall the MBP represents about 2.2% of total departmental direct program spending, including G&Cs.

- Just over half of expenditures are for salaries (about 180 FTEs)
- G&Cs represent about 8% of total expenditures
- Capital expenditures are about 2% of total expenditures (for example, for trucks and boats)
- Vote-netted revenues (VNR) represent about 7% of total expenditures (represents funds collected for hunting permits and other permitting)

The MBP has also Specified Purpose Accounts (SPA) that include funds received from the U.S. for national waterfowl and regional shorebird activities.

Table 1: actual ECCC expenditures for the Migratory Birds Program, fiscal year 2011 to 2012 to fiscal year 2016 to 2017 ($000s)

Branch and type of expenditure		2011 to 2012	2012 to 2013	2013 to 2014	2014 to 2015	2015 to 2016	2016 to 2017
Canadian wildlife Service	Salary	$11,618	$12,392	$13,346	$13,286	$13,119	$13,455
	O&M	$7,211	$7,379	$6,985	$7,370	$8,540	$8,469
	EBP	--	$2,519	$3,582	$2,707	$2,050	$2,010
	VNR	$0	$0	$0	$0	($2,019)	($1,993)
	Capital	$308	$304	$189	$109	$175	$63
	G&C	$1,844	$1,566	$1,928	$1,575	$1,749	$1,483
	Total	$21,216	$24,160	$26,029	$25,047	$23,615	$23,486
	FTEs	--	160	163	162	155	166
Environmental Protection Branch	Salary	--	--	$21	$21	$12	--
	EBP	--	--	$6	$4	$12	--
	Total	--	--	$27	$26	$14	--
Science and Technology Branch	Salary	--	$1,852	$2,331	$2,717	$2,515	$2,352
	O&M	$664	$854	$74	$407	$1,048	$891
	EBP	$1,802	$376	$626	$554	$393	$351
	VNR	--	--	--	($707)	($913)	($508)
	Capital	$46	$23	$47	$60	$233	$1,439
	G&C	$638	$558	$500	$315	$335	$346
	Total	$3,149	$3,662	$3,578	$3,345	$3,612	$4,871
	FTEs	--	23	25	31	26	25
Corporate Services and Finance Branch	O&M	$648	$560	$624	$554	$797	$404
	Capital	$151	$1,191	$10	$24	$280	$144
	Total	$799	$1,751	$634	$578	$1,077	$547
Other*	Salary	--	--	--	--	$60	$60
	O&M	$7,435	--	--	--	$1	--
	EBP	$11,628	--	--	$60	--	--
	Capital	$308	--	--	--	--	--
	G&C	$1,854	--	--	--	--	--
	Total	$21,225			$60	$61	$60
All branches	Salary	--	$14,244	$15,698	$16,023	$15,706	$15,867
	O&M	$8,746	$8,793	$7,683	$8,391	$10,387	$9,763
	EBP	$13,430	$2,895	$4,213	$3,265	$2,455	$2,370
	VNR	--	--	--	($707)	($2,932)	($2,501)
	Capital	$506	$1,518	$245	$193	$688	$1,645
	G&C	$2,491	$2,124	$2,428	$1,890	$2,084	$1,829
	Salary	--	$14,244	$15,698	$16,023	$15,706	$15,867
	TOTAL	$25,173	$29,573	$30,268	$29,056	$28,388	$28,973
	FTEs	--	183	188	193	181	191

Source: ECCC's Departmental Results Reports by year (verified by FMA in September 2017).
*Other includes the Audit and Evaluation Branch, the Enforcement Branch, the Strategic Policy Branch, the International Affairs Branch, regional offices, and performance pay

Appendix B: program expected results

The table below provides a mapping of the outcomes from the Migratory Bird Program's logic model to the expected results and themes used for reporting in this evaluation. The expected result statements were developed by the evaluation team in collaboration with program representatives as part of the evaluation's planning phase. They are designed to simplify the outcomes and reduce duplicate reporting of performance measures that reflect both direct and intermediate outcomes under the same theme.

Outcomes themes	Mapping to Migratory Birds Program Logic Model
Knowledge and data about migratory birds	
Knowledge and data are available to manage and assess bird populations	• **Direct Outcome 1:** New knowledge and data contributing to ECCC needs and objectives • **ECCC Performance Measurement Framework**: Data are available to manage and assess bird populations
Protecting birds and their habitats	
Priority habitats for migratory birds are conserved and improved	• **Direct outcome 5:** Land managers and organizations whose activities impact migratory bird habitat implement stewardship and other conservation actions • **Direct outcome 6:** Protected areas under ECCC management are maintained to provide optimal habitat and sanctuary for migratory birds • **Direct outcome 8:** Populations of migratory birds under particular threat are conserved • **Intermediate outcome 2:** Landscape conditions accommodate migratory bird requirements • **Intermediate outcome 3:** Priority habitats for migratory birds are protected and improved
Threats to migratory birds are reduced	• **Direct outcome 8:** Populations of migratory birds under particular threat are conserved • **Direct outcome 10:** Individuals and organizations subject to regulations comply with regulatory requirements (related to threat to migratory birds) • **Direct outcome 11:** Effects of toxic substances on migratory birds are mitigated • **Intermediate outcome 1:** Threats to migratory birds while in other countries are reduced • **Intermediate outcome 7:** Reduced population-level effects due to contact with toxic substances • **Intermediate outcome 8:** Incidental take is minimized and long-term conservation is supported • **Direct outcome 12:** Proponents of projects subject to CEAA include migratory bird needs into project design

Outcomes themes	Mapping to Migratory Birds Program Logic Model
Hunting and human interaction with migratory birds	
Migratory bird harvests are maintained at sustainable levels	• **Direct outcome 10:** Individuals and organizations subject to regulations comply with regulatory requirements (related to harvests) • **Intermediate outcome 6:** Migratory bird harvests are maintained at sustainable levels • **Direct outcome 7:** Management terms of land claims and other agreements with Aboriginal governments reflect migratory bird conservation objectives • **Intermediate outcome 4:** Migratory birds in land claim areas are conserved • **Note:** The two outcomes related to land claims and other agreements are addressed in the INAC evaluation and excluded from the scope of this evaluation.
Threats to public health and safety and economic loss due to migratory birds are reduced	• **Direct outcome 9:** Migratory birds that may cause damage or danger are managed • **Direct outcome 10:** Individuals and organizations subject to regulations comply with regulatory requirements (related to threats due to migratory birds) • **Intermediate outcome 5:** Threats to public health and safety and economic loss due to migratory birds reduced (for example, crop damage, disease, collisions with aircraft)
Awareness and value of migratory birds to Canadians	
Increased awareness and support for migratory bird conservation	• **Direct outcome 2:** Increased awareness and support for migratory bird conservation among target audiences • **Direct outcome 3:** Actions identified in conservation plans implemented in other countries • **Direct outcome 4:** Other governments include migratory bird conservation in policies and programs
Migratory birds are valued by Canadians	• **N/A (new outcome)** **Note:** This outcome was added based on input from CWS Senior Managers. It builds from Direct Outcome #2 and contributes to the ECCC Strategic Outcome "Canada's natural environment is conserved and restored for present and future generations".
Maintaining migratory birds at population goals (final outcome)	
Migratory bird populations are maintained at population goals	• **Final outcome:** Migratory bird populations maintained at healthy levels • **ECCC performance measurement:** Migratory bird populations maintained at population goals

Appendix C: summary of findings

Relevance

Evaluation issues	Expectations met	Further work required	Priority attention required	Unable to assess
Continued need for the program	•			
Alignment with federal government priorities	•			
Consistency with federal roles and responsibilities	•			

Expected results

Evaluation issues	Expectations met	Further work required	Priority attention required	Unable to assess
Knowledge and data about migratory birds				
Knowledge and data are available to manage and assess bird populations		•		
Protecting birds and their habitats				
Priority habitats for migratory birds are conserved and improved		•		
Threats to migratory birds are reduced		•		
Hunting and human interaction with migratory birds				
Migratory bird harvests are maintained at sustainable levels	•			
Threats to public health and safety and economic loss due to migratory birds are reduced	•			
Awareness and value of migratory birds to Canadians				
Increased awareness and support for migratory bird conservation		•		
Migratory birds are valued by Canadians	•			
Maintaining migratory birds at population goals				
Migratory bird populations are maintained at population goals		•		

Program efficiency

Evaluation issues	Expectations met	Further work required	Priority attention required	Unable to assess
Program design is appropriate for achieving intended outcomes	•			
External partnerships are in place and being used efficiently and effectively to deliver results		•		
Governance structure and responsibilities and accountabilities are clear and appropriate		•		
Program makes use of efficient processes and tools to improve efficiency	•			
Performance data is collected and used in decision making	•			

Appendix D: evaluation strategy

Purpose and scope

The evaluation covered the five-year timeframe from fiscal year 2011 to 2012 to fiscal year 2016 to 2017. The evaluation focused on key program activities aimed at ensuring that bird populations are maintained at healthy levels. The evaluation examined the Migratory Birds Program's (MBP) science components and its linkages with various domestic and international partners.

The following activities are scoped out of the evaluation: activities related to the World Class Tanker Safety System which will be evaluated by Transport Canada; and the Migratory Birds Federal Interlocutor's Contribution Program ((Powley), the Eeyou Land Claim Agreement and the Northwest Territories Protected Areas Strategy, which will continue to be evaluated by Indigenous and Northern Affairs Canada.

Evaluation methodology

The findings and conclusions presented in this document were based on five data collection methodologies. The evidence gathered using from these five methodologies was triangulated and used to develop the evaluation findings and conclusions:

Document review

The document review included descriptive information on: the MBP; internal strategic and operational documentation; departmental and Government of Canada policy publications; financial information; key scientific studies produced through program activities; and program performance measurement data.

Key informant interviews

In-depth interviews were conducted with 31 individuals. The distribution of interviews by respondent category is as follows:

- ECCC program management (n=13)
- ECCC senior management (n=3)
- Government partners (federal, provincial, international) (n=5)
- External stakeholders (n=10)

G&C project file review

A sample of 11 G&C projects was selected and reviewed to provide insights related to ongoing program needs and the performance of G&Cs in meeting program outcomes, as well as to inform the evaluation of the efficiency and economy. The file review included an analysis of items such as

contribution agreements, project activity reports, financial files, interview records and progress reports.

Case studies

Four species-specific case studies were conducted to provide in-depth information on the achievement of program outcomes, the effectiveness of program partnerships and to contrast different situations and needs within the program. Selections were made based on advice from program representatives and included the following species:

- Canada Goose
- Canada Warbler
- Canvasback
- Semipalmated Sandpiper

The case study methodologies included a review of relevant documents and literature and interview with two to four key informants per species.

Focus group on the role of partnerships

A focus group was conducted to explore the effectiveness of the use of partnerships in the program and their role in contributing to intended outcomes. Member organizations of the North American Bird Conservation Initiative (NABCI) were invited by the Audit and Evaluation Branch (AEB) to participate in the group. NABCI members include federal, territorial and provincial governments, conservation NGOs, private sector organizations, representatives from Habitat Joint Ventures, and partners from Canada's four major bird initiatives: the North American Waterfowl Management Plan, Partners in Flight - Canada, the Canadian Shorebird Conservation Plan and the North American Waterbird Conservation Plan. Eight individuals (representing eight member organizations) took part in the focus group, including three representatives of environmental non-governmental organizations (ENGOs), three representatives of industry associations, and two representatives of provincial and territorial departments of environment or natural resources.

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